I-70-1(15)20

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

1/261

MONTGOMERY COUNTY
MOT 40 - 2.73

(1-93)

142
Red

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
MOT 40-2.73

GRADE SEPARATION WITH PENNSYLVANIA RAILROAD BALTIMORE & OHIO RAILROAD

CLAY AND RANDOLPH TOWNSHIPS
MONTGOMERY COUNTY

CONVENTIONAL SIGNS

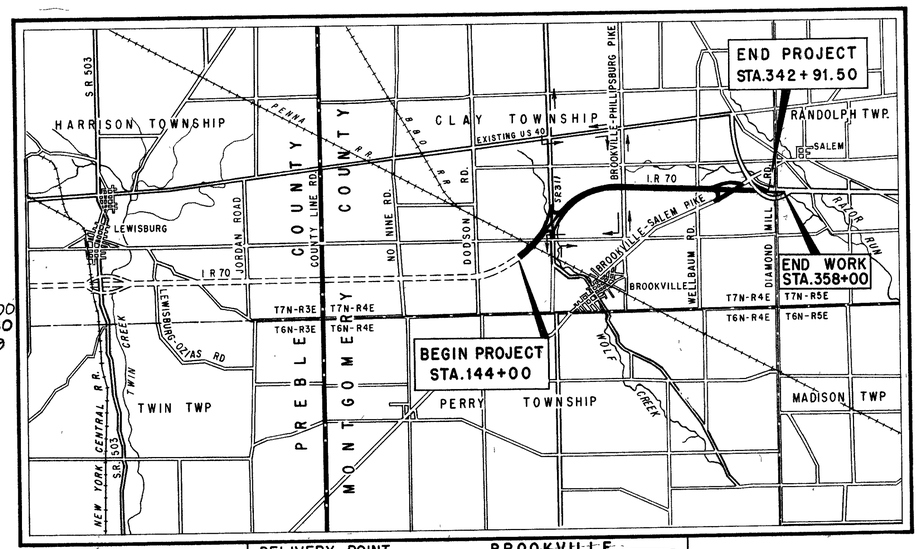
State Line
County Line
Township Line
Section Line
Center Line
Corporation Limits
Fence Line
Guard Rail (existing)
Guard Rail (proposed)
Steam Railroad
Power Poles
Telephone Poles
Trees or Stumps (existing)
Trees or Stumps (to be removed)

INDEX OF SHEETS

Sheets 13 and 237 are deleted from the plan

LINE DATA

Begin Project Sta. 144 + 00
End Project Sta. 342 + 91.50
Gross Length of Project 19,891.50 Lin.Ft.
Add for Equation (Sta. 311+61.63 = Sta. 306+10.10) (+) 551.53 Lin.Ft.
Deduct for Equation (Sta. 330+44.55 = Sta. 334+00) (-) 356.45 Lin.Ft.
Net Length of Project 20,086.58 Lin.Ft.
or 3.804 Miles
Add for Approaches (See Sheet No. 12) 12,867.73 Lin.Ft.
or 2.437 Miles
Total Length of Work 32,954.31 Lin.Ft.
or 6.241 Miles



DELIVERY POINT BROOKVILLE
AVERAGE HAUL FROM SIDING 1.6 MILES

LOCATION MAP

Plans Revised on Sheet No. 196 3-4-63 R.E.C.

Sheets 225 & 229 Revised 5-23-63.
Sheets 245 & 246 Revised 12-10-63

SCALE OF MILES
0 1 2 3 4

Portion to be improved
State Roads
Other Roads
Proposed Construction
Detour for S.R. 311

SCALE

Plan	1"= 50'
Profile: Horizontal	1"= 50'
Profile: Vertical, unless otherwise noted	1"= 5'
Cross Sections	1"=10'

H.W. LOCHNER & CO.
ENGINEERS
CHICAGO

LIMITED ACCESS

This improvement has been declared a limited access highway or freeway by action of the Director of Highways in accordance with the provisions of Section 5511.02, Revised Code of Ohio, and is especially designed for through traffic.

The standard specifications of the State of Ohio, Department of Highways, including changes and supplemental specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway, and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved Joseph M Unger
Date 11-7-62 Division Deputy Director

Approved Guy E. Nesper
Date 11-7-62 Deputy Director of Planning & Programming

Approved R.H. Brennan
Date 11-7-62 Engineer of Bridges

Approved W J Cannon
Date 11-7-62 Engineer of Location & Design

Approved C.W.M. Caughey
Date 11-7-62 Deputy Director of Design & Construction

Approved W.W. Sims
Date 11-8-62 Deputy Director of Right-of-Way

Approved J.A. Berry
Date 11-8-62 First Assistant Director

Approved E. S. Preston
Date 11-8-62 Director of Highways

Approved _____
Date _____ For The Pennsylvania Railroad

Approved _____
Date _____ For The Baltimore & Ohio Railroad

Harry W. Lochner

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED

DIVISION ENGINEER DATE

CSB-2-56 (Sheets 2&3)	2-2-59	SUPPLEMENTAL PRINTS of STANDARD CONSTRUCTION DRAWINGS								RB-1-55	2-2-59
										AR-1-57	4-2-62
B.T. 70.71	11-15-60	H.W.-C	7-15-57	I-8 C.B.#5	7-1-58	I-12	7-1-54	L.J. No.1	7-1-55	SP-53	6-30-61
B.T. 71R	3-2-53	H.W.-E	11-15-60			I-14G	1-22-52	RI-1	7-15-58	AS-1-54	7-5-62
DR-1	1-3-55	I-1	11-15-60	I-8 C.B.#8	3-15-60	I-15 No.2-A	8-17-60	T-35	1-2-56	L-3	4-1-50
F-2	10-1-58					I-15 No.5	6-1-61	T.J.	9-12-60	L-3-A	4-1-50
		I-8 C.B. 2-2A&B	3-2-59			I-15 No.6	7-1-59	F.A.C.I.-1	12-27-61	P-1-54	2-2-59
G-7.07	6-1-56	I-8 C.B. 2-3&2-4	1-26-59			I-21-23	8-1-56	F.A.C.I.-2	12-27-61	CS-2-54 (2 Sheets)	2-2-59
H.W.-A&B	7-15-57	I-8 C.B. No.4	7-1-58			L-1	4-1-50	I-15 No.1	11-15-60	SB-1-47	1-20-48

SUPPLEMENTAL SPECIFICATIONS			
L-120 Rev.	1-2-62	B-112	8-21-61
I-125 Rev.	6-26-61	M-107.18 Rev.	4-3-61
I-127 Rev.	1-15-62	M-109.28 Rev.	8-12-59
I-128	7-31-59		
I-129 Rev.	4-5-61	CE-101.04	5-22-56
S-207.10	4-25-61		
S-307	8-23-60		

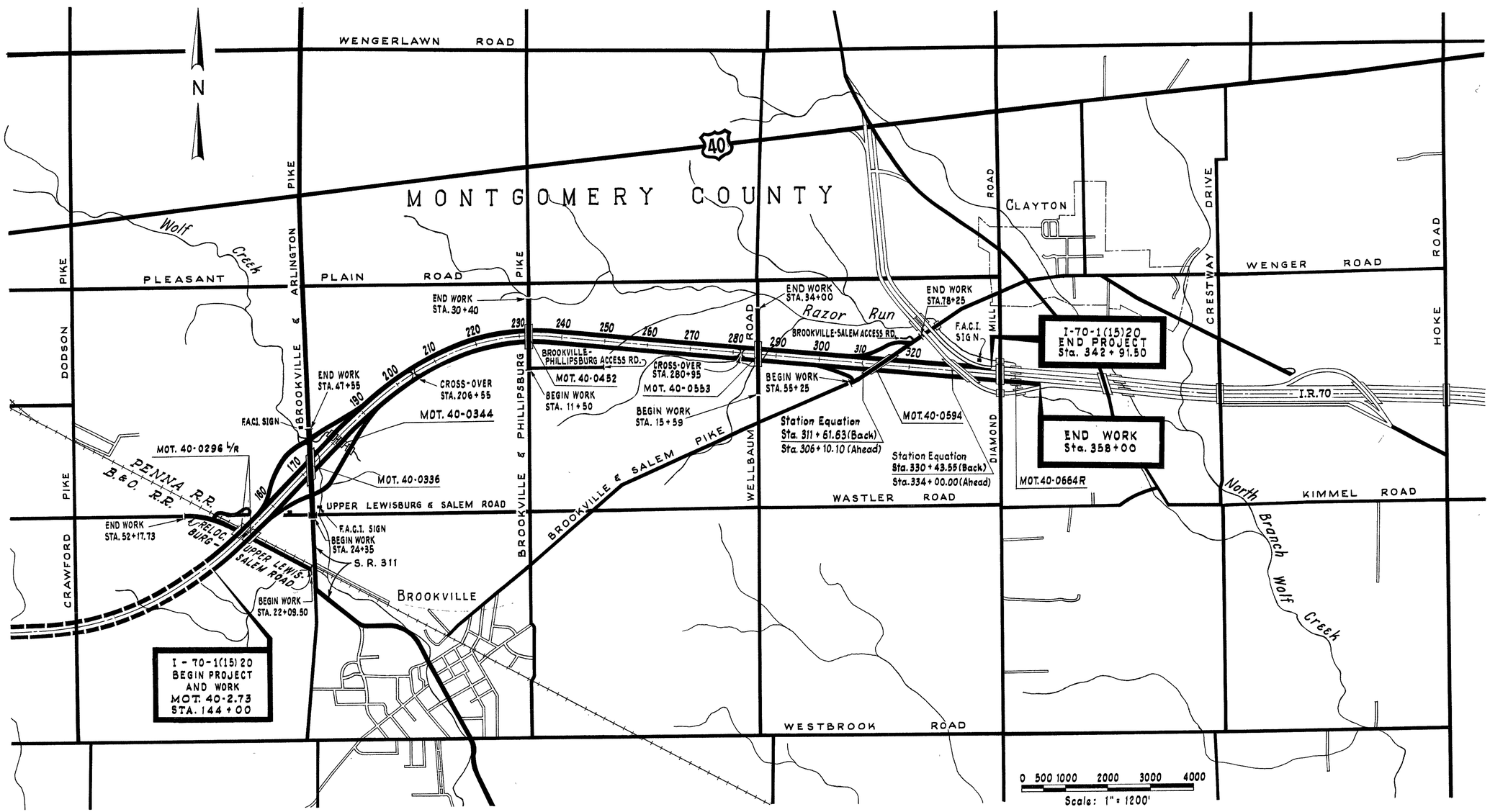
E NO. MONTGOMERY COUNTY MOT 40-2.73
DATE OF LETTING 19
CONTRACT NO.

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

2

MONTGOMERY COUNTY
MOT. 40-2.73

SCHEMATIC PLAN
U.S. ROUTE 40 (IR-70)
MOT 40-2.73



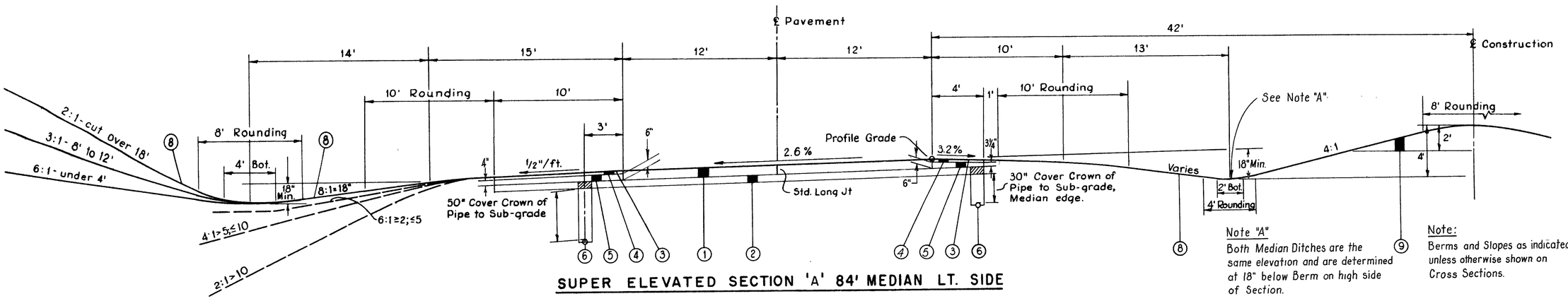
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

3

MONTGOMERY COUNTY
MOT. 40-2.73

TYPICAL SECTIONS, TYPE T-71

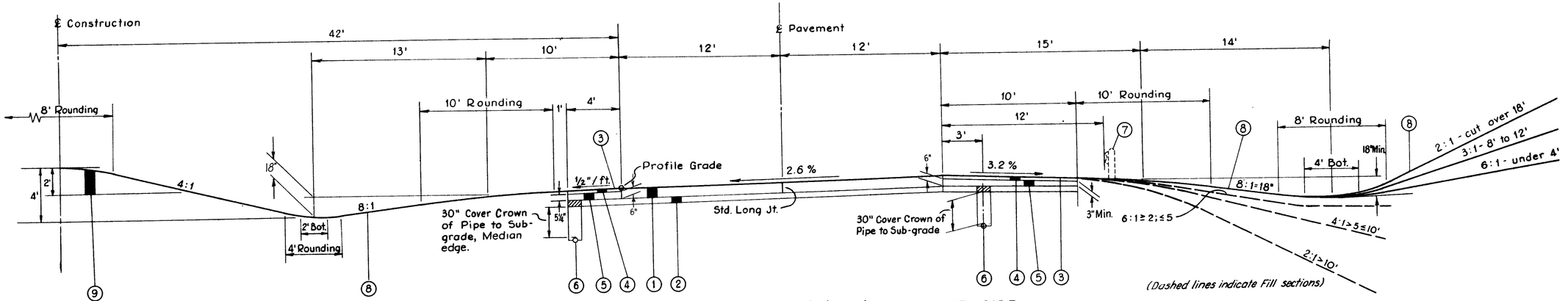
SCALE : 1/4" = 1'-0"



SUPER ELEVATED SECTION 'A' 84' MEDIAN LT. SIDE

Note "A"
Both Median Ditches are the same elevation and are determined at 18" below Berm on high side of Section.

Note:
Berms and Slopes as indicated unless otherwise shown on Cross Sections.



SUPER ELEVATED SECTION 'A' 84' MEDIAN RT. SIDE

STA 144+00.00 TO STA 155+03.35
(Includes transition from full super to normal section
STA 153+03.75 TO STA 155+03.35)

LEGEND

①	T-71	9" Reinforced Portland Cement Concrete Pavement
②	I-22	6" Sub-base Grade "A" or "B", Modified (See General Notes)
③	T-31	Bituminous Surface Treatment using 0.008 cu yd No. 6 Aggregate per sq. yd. and 0.25 Gal. Bituminous Material per sq. yd. (See Note in Proposal)
④	B-21**	3" Waterproofed Aggregate Base Course [Type "A" T-35 (85-100) Material may be used in the construction of this Course. See Note in Proposal]
⑤	B-112	Porous Base Course (Depths as shown)
⑥	I-1	6" Pipe, Class I-3 Standard
⑦	I-15	Guard Rail Steel Beam, Type, (Deep) (See Note 2)
⑧	L-9	Seeding and Protecting
⑨	L-3	Placing Stockpiled Topsoil

** Thickness shown is "designed" thickness as shown in Sec B-21.01

NOTE

1. ▨ Remove Sub-base for Width of Item I-1 Trench and replace with either Class 3 Backfill or with Porous Base Material immediately prior to placing the Item B-112 Porous Base Course. Cost shall be included in Price Bid per Lin Ft for Item I-1.
2. Item I-15 to be used on Fills greater than 10'-0" measured from Existing Ground to edge of Shoulder.
3. For Ditch requirements and limits, see Cross Sections.
4. For Benches as indicated on Cross Sections use Slope of ¼"/ft.

I. R. 70 TYPICAL SECTIONS

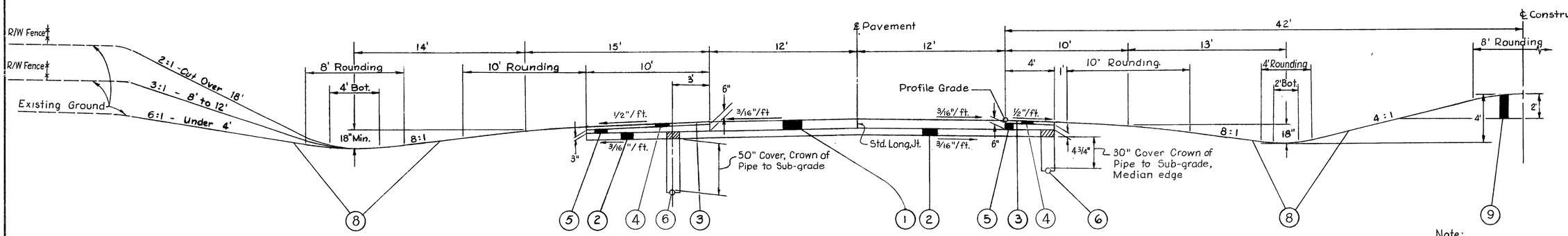
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

4

MONTGOMERY COUNTY
MOT. 40-2.73

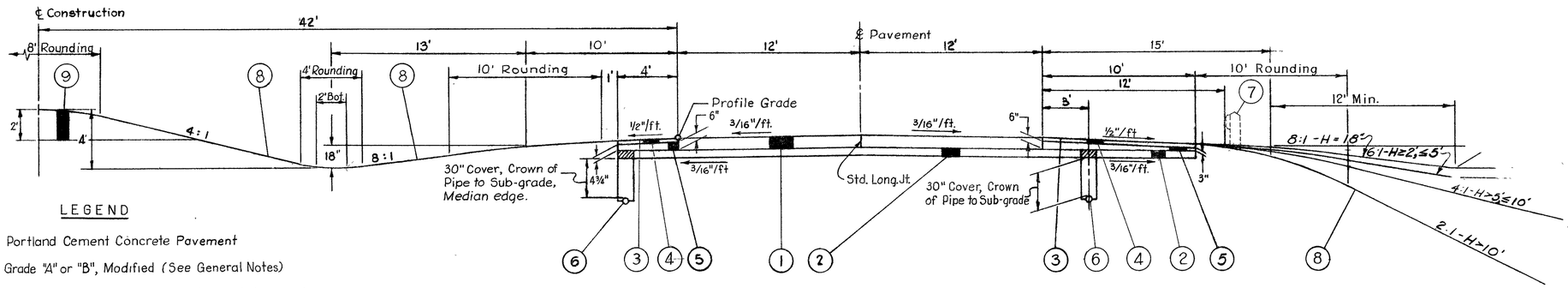
TYPICAL SECTIONS, TYPE T-71

SCALE: 1/4" = 1'-0"



NORMAL SECTION 'B'-84' MEDIAN-IN CUT

Note:
Berms and Slopes as indicated unless otherwise shown on Cross Sections.

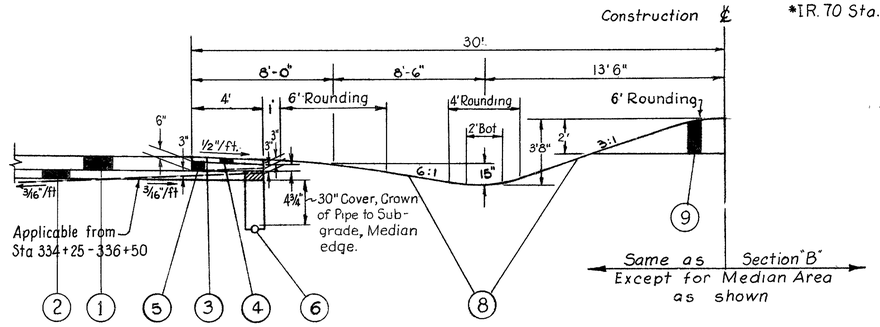


NORMAL SECTION 'B'-84' MEDIAN-IN FILL

STA. 155+03.35 TO STA. 195+93.60 *
Excludes approaches & bridge no. Mot.-40-0296 L/R
Sta. 155+32.64 to Sta. 157+85.36
Excludes approaches & bridge no Mot-40-0344
Sta. 181+15.00 to Sta. 181+85.00

* Edge elevations for pavement widening through the S R 311 & S.R. 49 Interchanges have been determined by a continuation of the adjacent through pavement elevations & cross slopes See Sheets 121 & 122 for S R 311 & See Sheet 154 for S.R. 49

*I.R. 70 Sta. 155+47.42 to Sta. 167+47.42 Ramp "A" S.R 311 *I.R 70 Sta. 188+00.00 to Sta. 200+02.97 Ramp "D" S.R 311
*I.R. 70 Sta. 157+81.30 to Sta 165+81.30 Ramp "B" S.R. 311
*I.R. 70 Sta. 188+61.34 to Sta 196+61.34 Ramp "C" S.R. 311 ** I.R 70 Sta. 296+69.37 to Sta. 308+69.37 Ramp "A" S.R. 49
** I.R 70 Sta. 298+67.23 to Sta. 306+67.23 Ramp "B" S.R. 49



NORMAL SECTION 'D' -60' RAISED MEDIAN

STA. 249+16.80 TO STA. 336+50 **

LEGEND

1. T-71 9" Reinforced Portland Cement Concrete Pavement
2. I-22 6" Sub-base Grade "A" or "B", Modified (See General Notes)
3. T-31 Bituminous Surface Treatment using 0.008 Cu. Yd No 6 Aggregate per Sq Yd. and 0.25 Gal. Bituminous Material per Sq Yd (See Note in Proposal)
4. B-21**3" Waterproofed Aggregate Base Course [Type "A" T-35 (85-100) Material may be used in construction of this Course. See Note in Proposal.]
5. B-112 Porous Base Course (Depth as Shown)
6. I-1 6" Pipe, Class I-3 (See Note 1)
7. I-15 Guard Rail Steel Beam Standard Type (Deep) (See Note 2)
8. L-9 Seeding and Protecting
9. L-3 Placing Stockpiled Topsoil

** Thickness shown is "designed" thickness as shown in Sec. B-21.01

NOTE

1. ▨ Remove Sub-base for Width of Item I-1 Trench and replace with either Class 3 Backfill or with Porous Base Material immediately prior to placing the Item B-112 Porous Base Course. Cost shall be included in Price Bid per Lin. Ft. for Item I-1.
2. Item I-15 to be used on Fills greater than 10'-0" measured from Existing Ground to Edge of Shoulder.
3. Transition from 84' Raised Median to 60' Raised Median to occur within curve from Sta. 235+50 to Sta. 247+50 @ Ratio 1:100. See Diagram Sheet No. 5
4. For ditch requirements and limits, see cross sections.

I. R. 70 TYPICAL SECTIONS

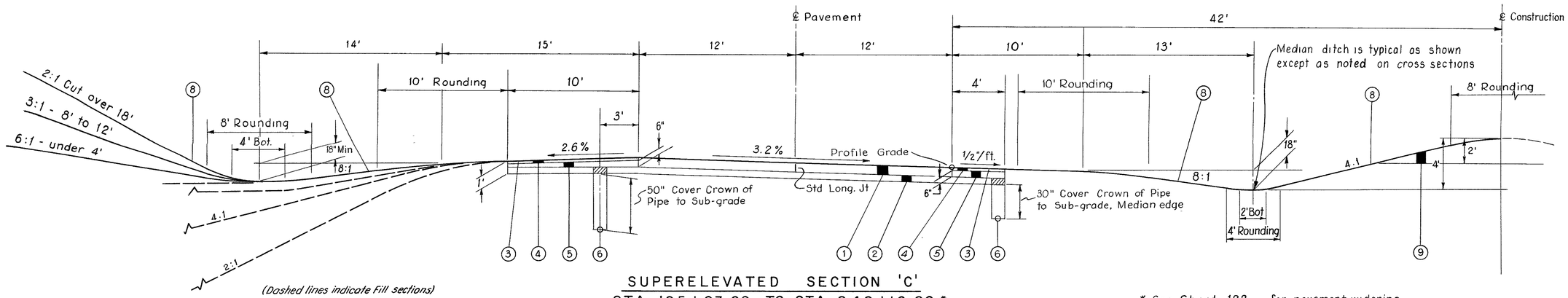
FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

5

MONTGOMERY COUNTY
MOT. 40-2.73

TYPICAL SECTIONS, TYPE T-71

SCALE: 1/4" = 1'-0"



SUPERELEVATED SECTION 'C'

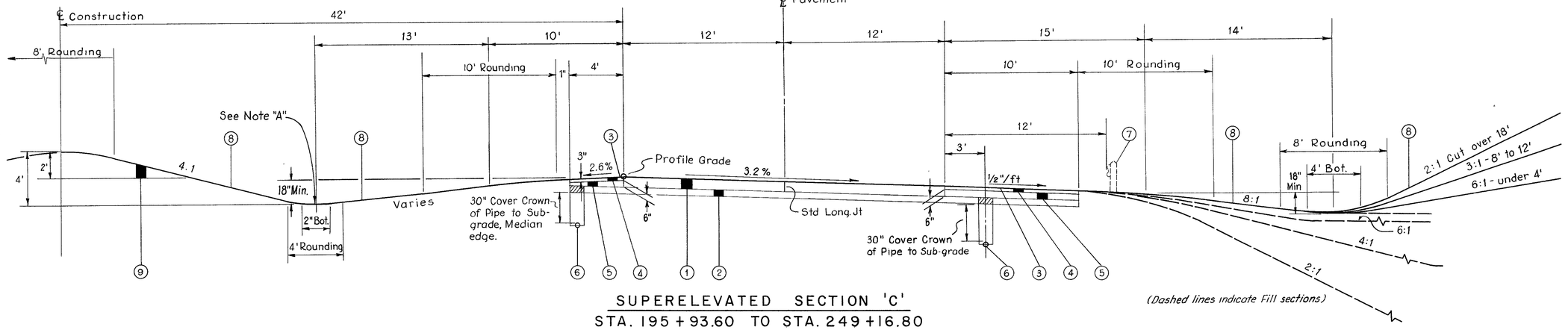
STA. 195+93.60 TO STA. 249+16.80 *

Includes: Transition from normal section to full super Sta. 195+93.60
to Sta 198+22.00. Transition full super to normal section Sta. 246+88.40
to Sta. 249+16.80. Transition of median width from 84' to 60' Sta 235+50.00
to Sta 247+50.00. (See diagram below)

* See Sheet 122 for pavement widening of Ramps C & D of SR 311 Interchange

Note:
Berms and Slopes as indicated unless otherwise shown on Cross Sections

Note "A"
Both Median Ditches are at the same elevation and are determined at 18" below Berm on high side of Section.



SUPERELEVATED SECTION 'C'

STA. 195+93.60 TO STA. 249+16.80

LEGEND

(1)	T-71	9" Reinforced Portland Cement Concrete Pavement
(2)	I-22	6" Sub-base Grade "A" or "B", Modified (See General Notes)
(3)	T-31	Bituminous Surface Treatment using 0.008 cu. yd. No. 6 Aggregate per sq yd. and 0.25 Gal. Bituminous Material per sq yd (See Note in Proposal)
(4)	B-21**	3" Waterproofed Aggregate Base Course [Type "A" T-35 (85-100) Material may be used in the construction of this Course - see Note in Prooosal]
(5)	B-112	Porous Base Course - (Depth as shown)
(6)	I-1	6" Pipe, Class I-3
(7)	I-15	Guard Rail Steel Beam, Standard Type (Deep) (See Note 2)
(8)	L-9	Seeding and Protecting
(9)	L-3	Placing Stockpiled Topsoil

** Thickness shown is "designed" thickness as shown in Sec B-21.01

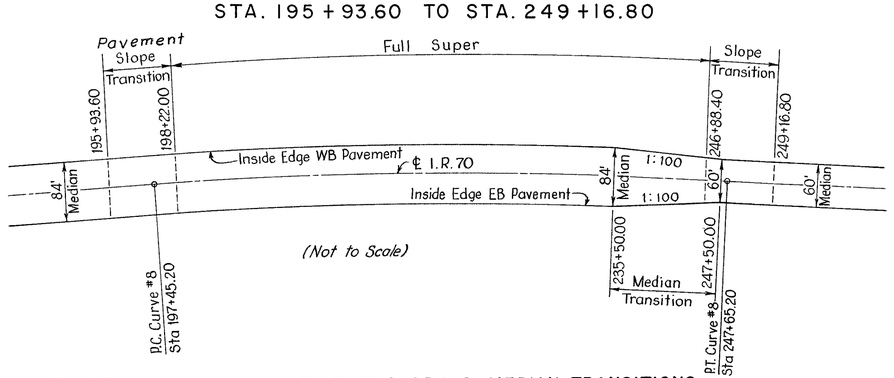


DIAGRAM SHOWING PAVEMENT SLOPE & MEDIAN TRANSITIONS

NOTE

1. ▨ Remove Sub-base for Width of Item H Trench and replace with either Class 3 Backfill or with Porous Base Material immediately prior to placing the Item B-112 Porous Base Course Cost shall be included in Price Bid per Lin. Ft. for Item I-1.
2. Item I-15 to be used on Fills greater than 10'-0" measured from Existing Ground to edge of Shoulder.
3. For ditch requirement and limits, see Cross Sections.

I. R. 70 TYPICAL SECTIONS

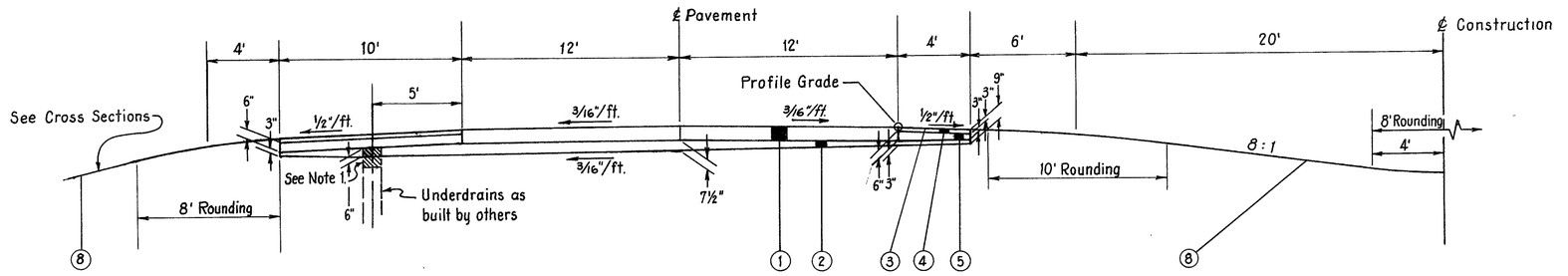
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

6

MONTGOMERY COUNTY
MOT. 40-2.73

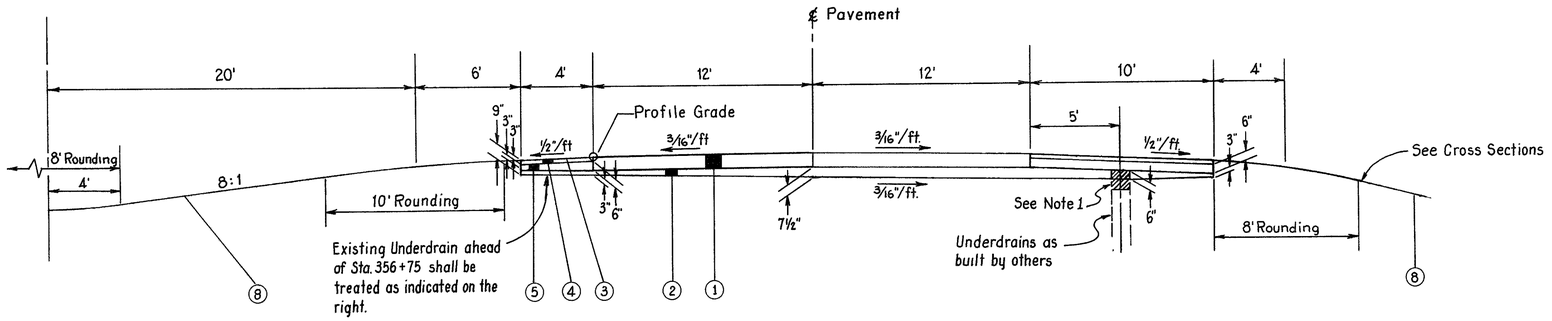
TYPICAL SECTIONS, TYPE T-71

SCALE: 1/4" = 1'-0"



NORMAL SECTION 'E' - 60' DEPRESSED MEDIAN

Westbound I.R.70 Sta.336+50 to Sta.342+91.50 (See Note 4)



NORMAL SECTION 'E' - 60' DEPRESSED MEDIAN

Eastbound I.R.70 Sta.336+50 to Sta.358+00 (See Note 4)

LEGEND

1. T-71 9" Reinforced Portland Cement Concrete Pavement
2. I-22 Sub-base Grade "A" or "B", Modified (As Noted)
3. T-31 Bituminous Surface Treatment using 0.008 Cu Yd No 6 Aggregate per Sq Yd and 0.25 Gal. Bituminous Material per Sq Yd (See Note in Proposal)
4. B-21**3" Waterproofed Aggregate Base Course [Type "A" T-35 (85-100) Material may be used in construction of this Course. See Note in Proposal.]
5. B-112 Porous Base Course (Depth as Shown)
6. I-1 6" Pipe, Class I-3 (See Note 1)
7. I-15 Guard Rail Steel Beam Standard Type (Deep) (See Note 2)
8. L-9 Seeding and Protecting

** Thickness shown is "designed" thickness as shown in Sec. B-21.01

NOTE

1. Remove Sub-base for Width of Item I-1 Trench and replace with either Class 3 Backfill or with Porous Base Material immediately prior to placing the Item B-112 Porous Base Course. Cost shall be included in Price Bid per Cu. Yd. for B-112.

   This work shall also include removal of existing Underdrain backfill material down to exposure of clean porous material in place and replacement of removed material with new Class 3 Underdrain backfill or B-112 material with payment included in the unit price bid for Item B-112.

2. Item I-15 to be used on Fills greater than 10'-0" measured from Existing Ground to Edge of Shoulder

3. For Ditch requirements and limits, see Cross Sections.

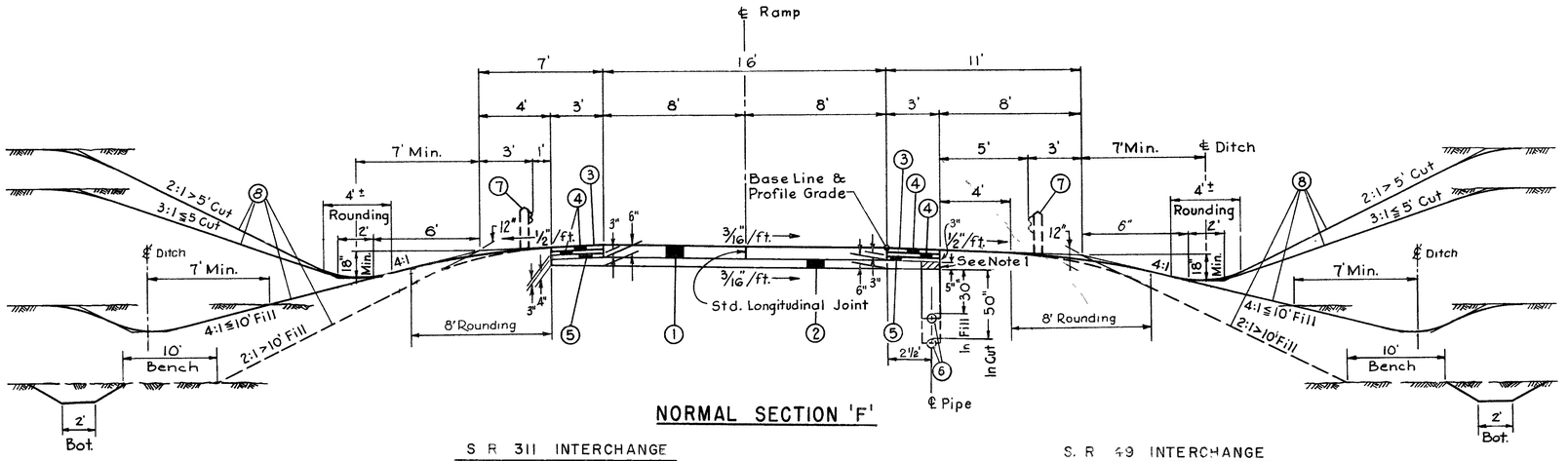
4. The last 100' the Median Shoulder will be transition from 4' to 5' Shoulder width.

I. R. 70 TYPICAL SECTIONS

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70 - 1(15)20	

7

MONTGOMERY COUNTY
MOT. 40-2.73



NORMAL SECTION 'F'

S R 311 INTERCHANGE

Ramp 'A' Sta. 4+54.90 to Sta. 4+98.17
Sta. 12+61.27 to Sta. 15+41.27

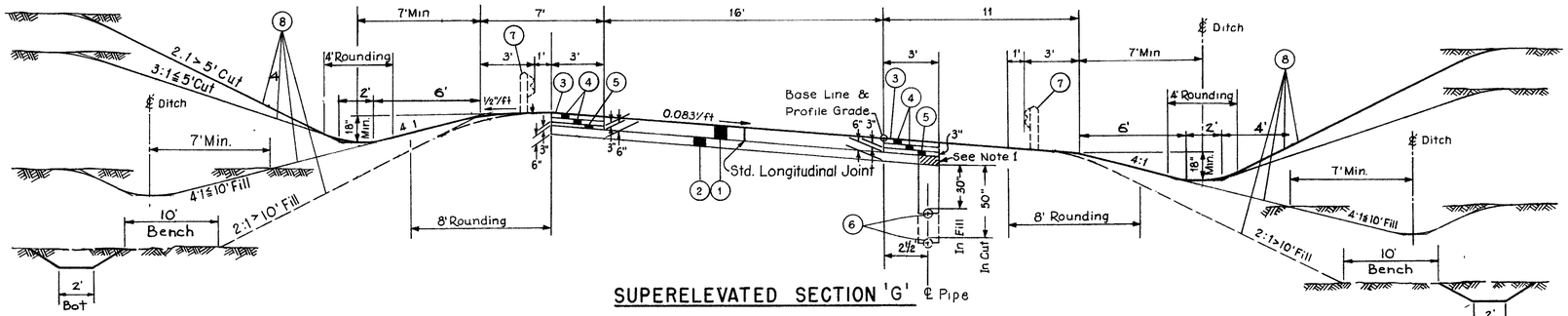
Ramp 'B' Sta. 14+37.57 to Sta. 16+06.00

Ramp 'C' Sta. 14+67.26 to Sta. 16+21.53

Ramp 'D' Sta. 4+89.33 to Sta. 6+50.35
Sta. 13+36.96 to Sta. 16+51.36

S. R 49 INTERCHANGE

Ramp 'A' Sta. 4+89.88 to Sta. 6+26.23
Sta. 12+10.65 to Sta 15+25.05



SUPERELEVATED SECTION 'G'

S.R. 311 INTERCHANGE

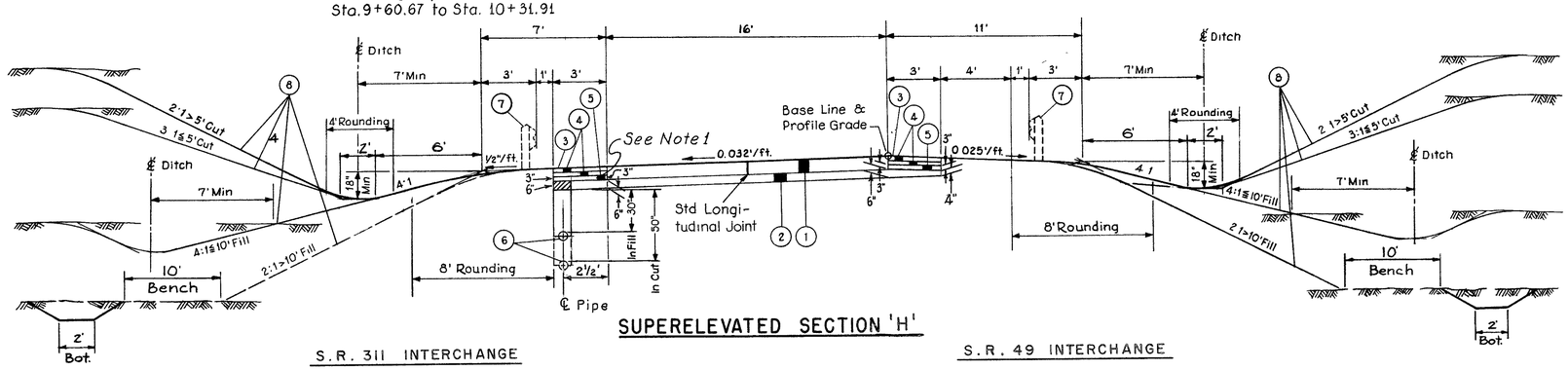
Ramp 'A' Sta. 4+98.17 to Sta. 12+61.27
Ramp 'B' Sta. 7+99.06 to Sta. 14+37.57
Ramp 'C' Sta. 7+99.06 to Sta. 14+67.26
Ramp 'D' Sta. 6+50.35 to Sta. 13+36.96
Excluding Approaches & Bridge No. MOT-40-0344
Sta. 9+60.67 to Sta. 10+31.91

S.R. 49 INTERCHANGE

Ramp 'A' Sta 6+26.23 to Sta. 12+10.65

Ramp 'B' Sta. 7+99.06 to Sta. 15+68.48

Note:
Berms and Slopes as indicated unless otherwise shown on Cross Sections.



SUPERELEVATED SECTION 'H'

S.R. 311 INTERCHANGE

Ramp 'A' Sta. 0+12.77 to Sta. 4+54.90

Ramp 'D' Sta. 0+12.77 to Sta. 4+89.33

S.R. 49 INTERCHANGE

Ramp 'A' Sta. 0+12.77 to Sta. 4+89.88

LEGEND

① T-71 9" Reinforced Portland Cement Concrete Pavement.

② I-22 Sub-Base Grade "A" or "B", Modified (See General Notes) (Depth as Shown)

③ T-31 Bituminous Surface Treatment using 0.008 cu. yd. No. 6 Aggregate per sq.yd. and 0.25 gal. Bituminous material per sq.yd. (See Note in Proposal)

④ B-21 ** 3" Waterproofed Aggregate Base Course [Type "A" T-35 (85-100) Material may be used in the construction of this Course - See Note in Proposal.]

⑤ B-112 Porous Base Course (Depth as shown).

⑥ I-1 6" Pipe, Class 1-3 (See Note 1)

⑦ I-15 Guard Rail Steel Beam Standard Type (Deep) See Note 2.

⑧ L-9 Seeding & Protecting

** Thickness shown is "designed" thickness as shown in Sec. B-21 01

NOTE

1. ▨ Remove Sub-base for Width of Item I-1 Trench and replace with either Class 3 Backfill or with Porous Base Material immediately prior to placing the Item B-112 Porous Base Course. Cost shall be included in Price Bid per Lin. Ft. for Item I-1.
2. Item I-15 to be used on Fills greater than 10'-0" measured from Existing Ground to Edge of Shoulder.
3. For ditch requirements and Limits, see cross sections
4. For details of S.R. 311 Ramp intersections with I.R. 70 and S.R. 311 see Sheets 121, 122 and 123.
5. For details of S.R. 49 Ramp intersections with I.R. 70 and Brookville Salem Rd. see Sheets 154 and 155.

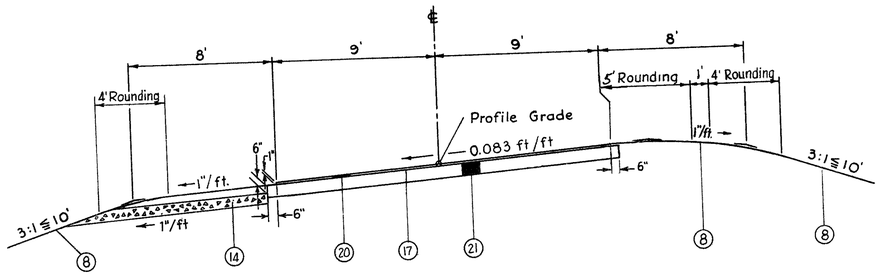
Scale: ¼" = 1'-0"

RAMP TYPICALS

FED RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

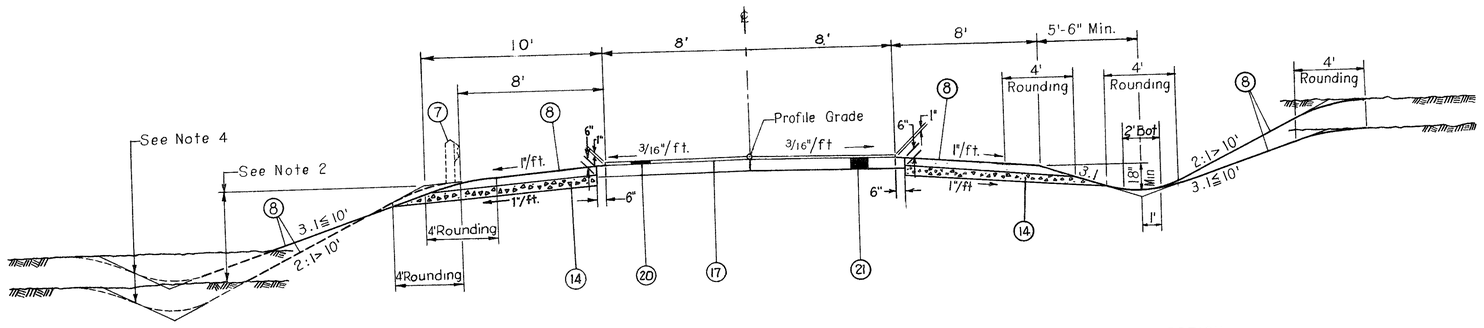
8

MONTGOMERY COUNTY
MOT. 40-2.73



Note:
Berms and Slopes as indicated unless otherwise shown on Cross Sections.

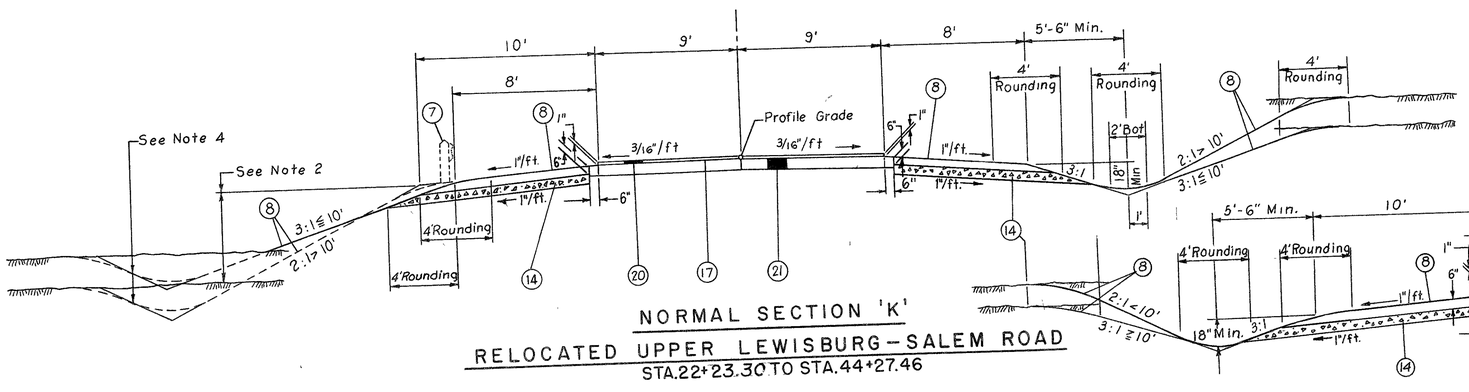
SUPERELEVATED SECTION 'I'
RELOCATED UPPER-LEWISBURG-SALEM ROAD
STA. 44+27.46 TO STA. 52+17.73*



FILL SECTION

CUT SECTION

NORMAL SECTION 'J'- WELLBAUM ROAD
STA. 15+59.00 TO STA. 34+00.00*
Excludes approach & bridge no. Mot.-40-0553
Sta 22+87.05 to Sta. 25+79.57



NORMAL SECTION 'K'
RELOCATED UPPER LEWISBURG-SALEM ROAD
STA. 22+23.30 TO STA. 44+27.46

LEGEND

(10) B-19 5" Aggregate Base Course

(13) B-35** 1¾" Asphaltic Concrete leveling Course (85-100)

(7) I-15 Guard Rail Steel Beam Standard Type (Deep) (See Note 2).

(8) L-9 Seeding and Protecting (See General Notes).

(18) T-35** 1" Asphaltic Concrete Surface Course, Type "C" (70-85).

(14) I-9 Stone Underdrains, No 2 (See Note 1).

(20) T-35** 1½" Asphaltic Concrete Surface Course, Type "A" (85-100).

(17) T-30 Bituminous Prime Coat, Sec. M-5.7 RT-2 or RT-3 applied at the rate of 0.4 Gal. per Sq. Yd.

(21) B-19 8" Aggregate Base Course

(16) I-22 4" Sub-Base

(19) T-35** 1¼" Asphaltic Concrete Surface Course, Type "C" (85-100)

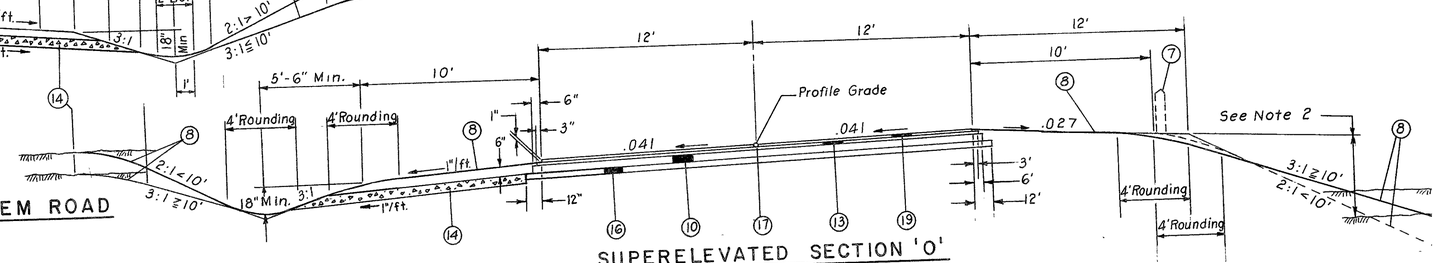
NOTE

1. Item I-9 Underdrains shall be spaced alternately Right and Left at 50 foot Intervals as directed by the engineer. Space at 25 foot Intervals on low side of Superelevated Section only.

2. Item I-15 to be used on fills greater than 10'-0" measured from existing ground to edge of Shoulder.

3. For Ditch requirements and limits, See Cross Sections

** Thickness shown is designed thickness as shown in Sec. B-35.01 and T-35.01



SUPERELEVATED SECTION 'O'
BROOKVILLE-SALEM ROAD
STA. 55+94.25 TO STA. 63+55.41
Excludes approaches & bridge no. Mot-40-0594
Sta. 62+96.95 to Sta. 63+55.41

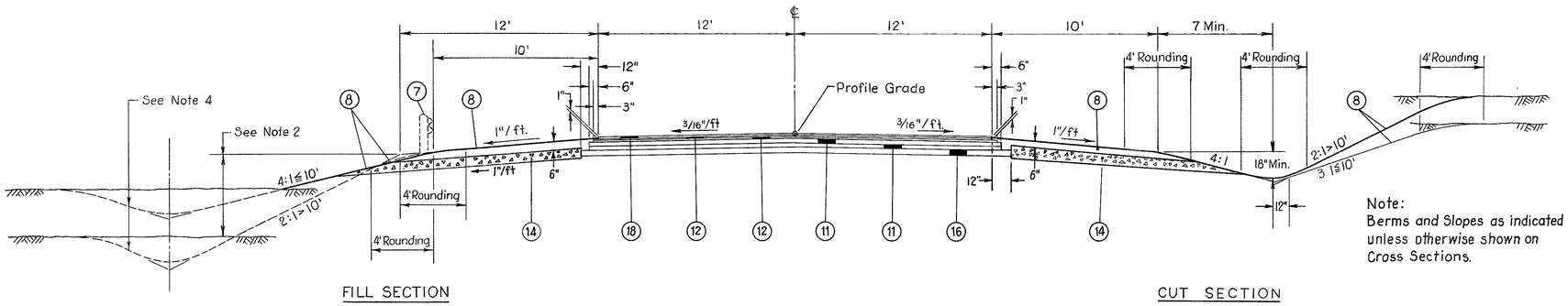
RELOCATED UPPER LEWISBURG-SALEM RO
WELLBAUM ROAD, BROOKVILLE-SALEM RO

CROSS ROAD TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

8-A

MONTGOMERY COUNTY
MOT. 40-2.73



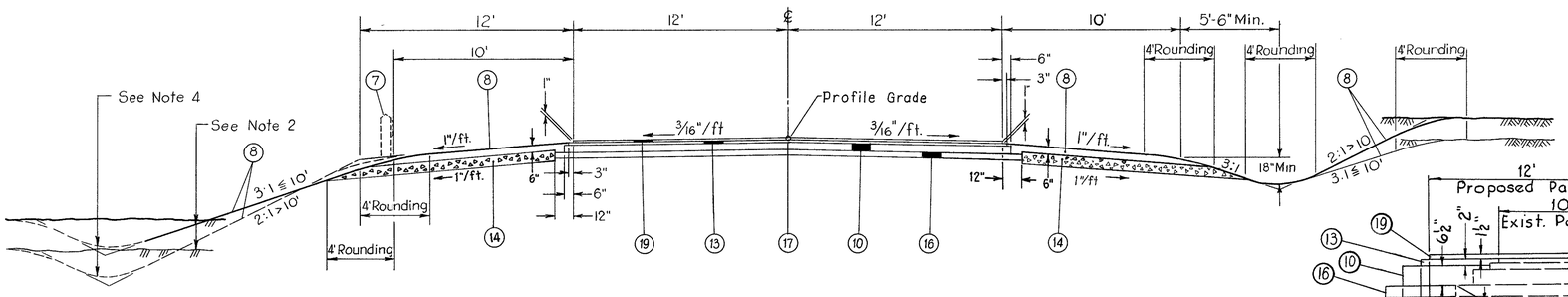
FILL SECTION

CUT SECTION

Note:
Berms and Slopes as indicated unless otherwise shown on Cross Sections.

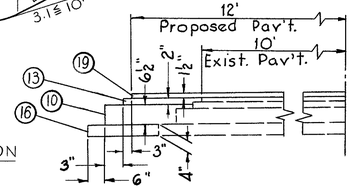
NORMAL SECTION 'L'-S.R. 311

STA. 23+10.00 TO STA. 47+55.00
Excluding approaches & bridge no. Mot.-40-0336
Sta 33+08.75 to Sta. 37+36.45



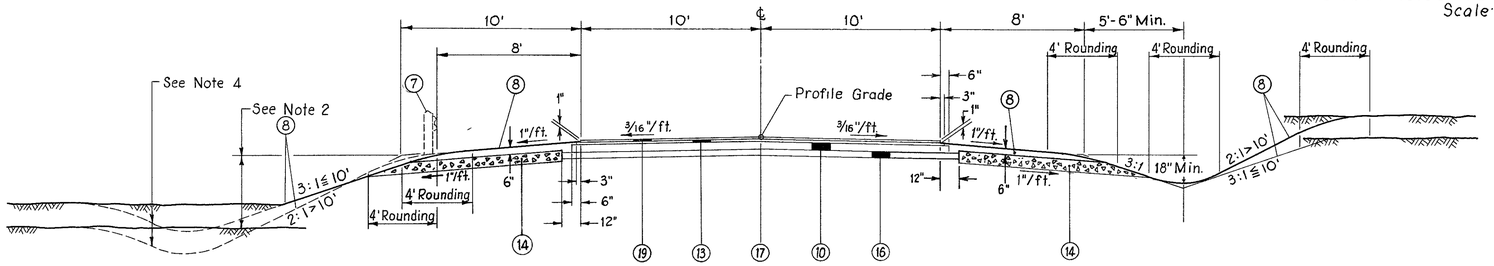
FILL SECTION

CUT SECTION



NORMAL SECTION 'M'-BROOKVILLE SALEM ROAD

STA. 55+25.00 TO STA. 55+94.25 *
STA. 63+55.41 TO STA. 77+10.00
Excluding approach & bridge no. Mot.-40-0594
Sta. 63+55.41 to Sta. 67+22.97



FILL SECTION

CUT SECTION

PROPOSED SECTION 'O' WIDENING OF EXISTING PAVEMENT BROOKVILLE SALEM ROAD

STA. 77+10.00 TO STA. 77+98.00
Scale: 1/2" = 1'-0"

NORMAL SECTION 'N'-BROOKVILLE PHILLIPSBURG ROAD

STA. 11+50.00 TO STA. 29+96.00 *
Excluding approaches & bridge no. Mot-40-0452
Sta 18+39.25 to Sta. 21+60.75

LEGEND

Standard

⑦ I-15 Guard Rail Steel Beam Type, (Deep) (See Note 2)
⑧ L-9 Seeding and Protecting.
⑩ B-19 5" Aggregate Base Course.
⑪ B-21**2½" Waterproofed Aggregate Base Course.
⑫ B-35**1½" Asphaltic Concrete Leveling Course *(70-85)*
⑬ B-35**1¾" Asphaltic Concrete *Leveling* Course *(85-100)*
⑭ I-9 Stone Underdrains, No. 2 (See Note 1)
⑯ I-22 4" Sub-base
⑰ T-30 Bituminous Prime Coat, Sec. M-5.7 RT-2 or RT-3 applied at the rate of 0.4 gal. per sq. yd.
⑱ T-35**1" Asphaltic Concrete Surface Course, Type "C" (70-85)
⑲ T-35**1¼" Asphaltic Concrete Surface Course, Type "C" (85-100)

** *Thickness shown is "designed" thickness as shown in Sec. B-21.01, B-35.01 and T-35.01.*

NOTE

1. Item I-9 Underdrains shall be spaced alternately Right and Left at 50 foot intervals as directed by the Engineer.
2. Item I-15 to be used on fills greater than 10 feet, measured from existing ground to shoulder edge.
3. For Ditch requirements and limits, see Cross-Sections.

Scale 1/4" = 1'-0" or as noted

S.R. 311
BROOKVILLE - SALEM ROAD
BROOKVILLE - PHILLIPSBURG ROAD

CROSS ROAD TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
MOT. 40-2.73

GENERAL NOTES

ELEVATION DATUM
ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS
THE ROUNDED CORNERS SHOWN ON STANDARD DRAWING RI-1, AS MODIFIED BY THE TYPICAL SECTIONS, APPLY TO ALL CROSS SECTIONS, EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

UTILITY ADJUSTMENT
ANY OR ALL WORK REQUIRED FOR PUBLIC OR PRIVATE UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THEIR RESPECTIVE OWNERS, UNLESS OTHERWISE NOTED ON THESE PLANS.

FIELD OFFICE
THE CONTRACTOR SHALL, IN ACCORDANCE WITH SEC. S-0.01(B), PROVIDE, FOR THE EXCLUSIVE USE OF THE STATE'S EMPLOYEES, A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 500 SQ. FT. OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THIS FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE AND INSTALL WIRING AND OUTLETS SUITABLE FOR CONNECTING ELECTRIC LIGHTS AND OFFICE EQUIPMENT IN THE FIELD OFFICE AND PROVIDE 110-VOLT ALTERNATING CURRENT TO THE OFFICE DURING THE ENTIRE PERIOD OF CONSTRUCTION OF THIS PROJECT.

DESIGN SPEED
THE GEOMETRICS FOR THIS PROJECT HAVE BEEN PLANNED FOR A DESIGN SPEED OF 70 MILES PER HOUR.

UNDERGROUND UTILITIES
THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO MAKES NO GUARANTEE AS TO THEIR ACCURACY OR COMPLETENESS.

ESTIMATED QUANTITIES
SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED "AS DIRECTED BY THE ENGINEER" SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

CONSTRUCTION LAYOUT STAKES
SEE NOTE IN PROPOSAL DESCRIBING THE WORK INCLUDED IN THIS LUMP SUM PAY ITEM.

SUPERELEVATION
SUPERELEVATED CURVES SHALL BE BUILT WITHOUT CROWN. THE CROWN SHALL BE WORKED OUT OF THE PAVEMENT IN THE PORTION BETWEEN THE BEGINNING OF THE TRANSITION AND THE POINT WHERE THE SUPERELEVATION EQUALS TWICE THE CROWN.

NON-RIGID PAVEMENT REMOVAL
REMOVAL AND DISPOSAL OF EXISTING NON-RIGID PAVEMENT, UNLESS OTHERWISE INDICATED ON THESE PLANS, SHALL BE MEASURED AND PAID FOR AS ITEM E-1, ROADWAY EXCAVATION.

SCARIFICATION OF EXISTING FLEXIBLE PAVEMENT
WITHIN THE LIMITS OF CONSTRUCTION WHERE THE EXISTING FLEXIBLE PAVEMENT WILL HAVE LESS THAN SIX (6) INCHES OF FILL PLACED UPON IT, THE PAVEMENT SHALL BE THOROUGHLY SCARIFIED FOR ITS FULL DEPTH, MIXED WITH SUFFICIENT SOIL AND PROPERLY RECOMPACTED TO INSURE THE ELIMINATION OF ANY PLANES OF SEPARATION BETWEEN IT AND THE EMBANKMENT PLACED THEREON. PAYMENT FOR SCARIFICATION AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

CONTRACTION AND EXPANSION JOINTS
ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES AND THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL IN ALL CASES BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING T. J.

CENTERLINE REFERENCE MONUMENTS, AS PER PLAN
MONUMENTS SHALL BE CONSTRUCTED OF CLASS "C" CONCRETE, CAST-IN-PLACE IN A CIRCULAR HOLE EIGHT (8) INCHES IN DIAMETER AND THIRTY-EIGHT(38) INCHES IN DEPTH. TOP OF CONCRETE SHALL BE FINISHED AT A DEPTH OF TWO (2) INCHES BELOW GROUND LEVEL AND THE UPPER SIX (6) INCH PORTION OF THE CONCRETE SHALL BE FORMED. ONE-HALF (1/2) INCH STEEL RODS SIX (6) INCHES LONG SHALL BE EMBEDDED IN THE WET CONCRETE AS DIRECTED BY THE ENGINEER TO MARK THE CENTERLINE AND STATION.

ITEM I-22 SUBBASE, GRADING "A" OR "B", AS PERPLAN
THE MATERIAL FURNISHED FOR THIS ITEM SHALL MEET THE REQUIREMENTS OF GRADING "A" OR "B" OF SEC. I-22.02 EXCEPT THAT, FOR EITHER GRADING, NO MORE THAN 10 PERCENT OF THE MATERIAL SHALL PASS A NO. 200 SIEVE AFTER ALL OPERATIONS OF PLACING AND COMPACTING HAVE BEEN COMPLETED.

ITEM L-1, TOPSOIL STOCKPILED
THE MATERIAL TO BE STOCKPILED FOR PLACEMENT UNDER ITEM L-3 ON THIS PROJECT SHALL BE OBTAINED UNDER ITEM L-1 FROM AREAS WITHIN THE LIMITS OF THE PROPOSED RIGHT-OF-WAY AS DIRECTED BY THE ENGINEER. NO BORROW ITEM IS ANTICIPATED FOR THIS PURPOSE.

PROVISION OF THIS SEPARATE L-1 ITEM SHALL, IN NO WAY, BE CONSTRUED AS A WAIVER OF THE PROVISIONS OF SEC. E-1.03 (A) AND SOD AND INCIDENTAL TOPSOIL REMOVED ELSEWHERE ON THIS PROJECT SHALL BE SALVAGED AND USED AS DESCRIBED IN ITEM E-1 WITH PAYMENT THEREFOR INCLUDED IN THE UNIT PRICE BID FOR ROADWAY EXCAVATION.

ITEM L-3 PLACING STOCKPILED TOPSOIL, AS PER PLAN
ON THIS PROJECT, THE METHOD OF MEASUREMENT FOR THIS ITEM SHALL BE IN CUBIC YARDS COMPACTED IN PLACE IN LIEU OF SQUARE YARDS AS SPECIFIED IN SEC. L-3.10. FURNISHING AND PLACING OF COMMERCIAL FERTILIZER IN CONJUNCTION WITH THIS ITEM SHALL BE IN ACCORDANCE WITH ITEM L-9 AND PAYMENT THEREFOR SHALL BE AT THE UNIT PRICE BID FOR ITEM L-9 COMMERCIAL FERTILIZER. EXCEPT AS NOTED, ALL OTHER REQUIREMENTS OF THIS ITEM SHALL BE IN ACCORDANCE WITH ITEM L-3.

ITEM L-3 TOPSOIL SHALL ALSO BE SPREAD TO A MINIMUM DEPTH OF FOUR (4) INCHES ON ALL SANDY OR GRAVEL AREAS TO BE SEEDED OR SODDED AS DIRECTED BY THE ENGINEER. COMMERCIAL FERTILIZER (12-12-12) SHALL BE APPLIED ON THE SURFACE OF THE TOPSOIL AT THE RATE OF TWENTY (20) POUNDS PER 1,000 SQUARE FEET AND THE TOPSOIL AND FERTILIZER IMMEDIATELY INCORPORATED INTO THE TOP FOUR INCHES OF THE UNDERLYING GRANULAR MATERIAL.

WITHIN 48 HOURS AFTER FERTILIZING AND INCORPORATING, THE AREA SHALL BE SEEDED WITH THE FOLLOWING MIXTURE AT THE RATE OF THREE (3) POUNDS PER 1,000 SQUARE FEET.

25% KENTUCKY BLUEGRASS (POA PRATENSIS)
65% KENTUCKY 31 FESCUE (FESTUCA ELATIOR VAR.KY.31)
10% RED CLOVER (TRIFOLIUM PRATENSE)

ALL DITCH AREAS WHERE TOPSOIL HAS BEEN APPLIED AS DIRECTED SHALL BE COVERED WITH JUTE MATTING (SUPPLEMENTAL SPECIFICATION ITEM L-120) AND NECESSARY ADJUSTMENTS IN PAY QUANTITIES FOR THIS ITEM WILL BE MADE AT THE TIME OF FINAL MEASUREMENT.

WITHIN 48 HOURS AFTER SEED HAS BEEN COVERED AS SPECIFIED UNDER L-9.11, AREA SHALL BE MULCHED USING METHODS 1, OR 4 EXCEPT THAT IF METHOD 4 IS USED, THE MULCHING AND ASPHALT MATERIALS SHALL BE APPLIED AT DOUBLE THE SPECIFIED NOTES.

PAYMENT FOR ALL EXTRA OPERATIONS DESCRIBED ABOVE AND NOT INCLUDED IN ITEMS L-9 AND L-120 SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM L-3.

SEALING OF PIPE JOINTS
WHERE CONNECTIONS ARE MADE BETWEEN RIGID AND FLEXIBLE PIPE SECTIONS OR BETWEEN PIPE SECTIONS OF DIFFERENT KIND OR TYPE OF END FABRICATION, WHETHER REQUIRED BY THE PLANS, ARISING FROM PERMISSIBLE USE OF OPTIONAL MATERIALS, OR ENCOUNTERED IN CONNECTION TO EXISTING FACILITIES, THE JOINT SHALL BE SEALED, IF SEALING IS REQUIRED BY THE SPECIFICATIONS, BY MEANS OF A CLASS "E" CONCRETE COLLAR HAVING A MINIMUM THICKNESS OF 6 INCHES AND A MINIMUM LENGTH OF 12 INCHES. PAYMENT FOR SEALING AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT PIPE ITEM.

INTERCEPTOR DITCHES
INTERCEPTOR DITCHES, WHEN PROVIDED BY THE PLAN, SHALL BE CONSTRUCTED AT THE BEGINNING OF THE GRADING OPERATION, AND ANY EROSION PROTECTION PROVIDED BY THE PLAN SHALL BE PLACED IMMEDIATELY.

EROSION PROTECTION AT CULVERTS AND OTHER OUTLETS
EROSION PROTECTION, SUCH AS PAVED GUTTERS, DUMPED ROCK CHANNEL PROTECTION, ETC., WERE PROVIDED IN THE PLAN AT STRUCTURES AND OTHER PIPE OUTLETS, SHALL BE PLACED IMMEDIATELY AFTER INSTALLATION OF THE PIPE OR STRUCTURE.

FIELD DRAINS
ALL FARM TILES WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS UNDER THE DIRECTION OF THE ENGINEER. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY SHALL BE REPLACED WITHIN THE RIGHT-OF-WAY LIMITS BY ITEM I-1 CLASS A-1 PIPE FOR PIPES PASSING BENEATH MAIN PAVEMENT AND/OR SHOULDER.

EXISTING COLLECTORS AND ISOLATED FARM TILES WHICH ARE ENCOUNTERED ABOVE THE ELEVATIONS OF ROADWAY DITCHES SHALL BE OUTLETTED INTO THE ROADWAY DITCH. THE OPTIMUM OUTLET ELEVATIONS SHALL BE, IF POSSIBLE, ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH.

A TEN FOOT SECTION OF CLASS F-1 PIPE WILL BE REQUIRED TOGETHER WITH AN EROSION PAD CONSISTING OF I-10 MATERIAL AS DIRECTED BY THE ENGINEER.

LATERAL TILE FIELDS WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY CLASS H-2 PIPE AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REQUIRED REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE·

I-1	6"PIPE, SEC. M-6.6(B) OR 6.8(B)	CLASS A-1	400 LIN.FT.
I-1	8"PIPE, SEC. M-6.6(B) OR 6.8(B)	CLASS A-1	400 LIN. FT.
I-1	10"PIPE, SEC. M-6.6(B) OR M-6.8 (B)	CLASS A-1	400 LIN. FT.
I-1	10"PIPE	CLASS H-2	200 LIN. FT.
I-1	12"PIPE	CLASS H-2	200 LIN. FT.
I-1	15"PIPE	CLASS H-2	200 LIN. FT.
I-1	8"PIPE	CLASS F-1	100 LIN. FT.
I-1	10"PIPE	CLASS F-1	50 LIN. FT.
I-1	12"PIPE	CLASS F-1	50 LIN. FT.
I-10	DUMPED ROCK		110 CU. YD.

SPRING DRAIN
REFERENCE IS MADE TO THE DETAILED DRAWING ON SHEET # 159 SHOWING THE METHOD OF DRAINING ANY SPRING THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

I-9	STONE UNDERDRAINS NO. 1 AS PER PLAN		12 LIN. FT.
I-1	6" PIPE	CLASS F-1	200 LIN. FT.

REMOVAL OF TREES AND STUMPS
ALL TREES AND STUMPS LYING WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM E-9, REMOVAL OF TREES AND STUMPS, EXCEPT THAT THOSE TREES AND STUMPS FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZES	NO. TREES	NO. STUMPS
12" - 18"	221	4
18" - 24"	41	5
24" - 30"	18	15
30" - 36"	6	0
36" - 42"	6	0
42" - 48"	1	0
Over 48"	0	0

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM E-9, REMOVAL OF TREES AND STUMPS.

SPECIAL DITCHES
FOR SPECIAL DITCH GRADES, SEE CROSS SECTIONS.

TILE FOR SUBGRADE DRAINAGE
6" DRAIN TILE, SECTION M-6.1 OR M-6.2 SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR, IN MANHOLES, CATCH BASINS AND INLETS FOR SUBGRADE DRAINAGE, WHERE, AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR SAME SHALL BE INCLUDED IN THE PRICE BIG PER "EACH" FOR MANHOLES, CATCH BASINS AND INLETS.

PLUGGING PIPE
THE UPSTREAM ENDS OF ALL PIPE OR TILE LINES INTERCEPTED BY EARTH-WORK OPERATIONS (AND, WHERE INDICATED, THE ENDS OF PIPE LINES TO BE ABANDONED IN PLACE) SHALL BE EFFECTIVELY BLOCKED AND COVERED. BROKEN PIECES AND PORTIONS OF PIPE OR TILE SHALL BE REMOVED UNTIL A WHOLE LENGTH IS ENCOUNTERED WHICH SHALL BE BLOCKED WITH CONCRETE. FLAT STONE OR BRICK LAID IN MORTAR, OR A PRECAST CLAY OR CONCRETE STOPPER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

FED RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
MOT. 40-2.73

GENERAL NOTES

DRAINAGE OF BASE MATERIAL
WHERE THE BASE MATERIAL IS DRAINED BY I-9 STONE UNDERDRAINS THE CONTRACTOR SHALL FINISH, SEED, AND MULCH THE SLOPES SO AS NOT TO IMPEDE DRAINAGE OF THE BASE MATERIAL. THE ACTUAL AREA OF THE OUTCROP OF THE I-9 UNDERDRAINS SHALL NOT BE SEEDED.

EXCAVATION FOR DRIVEWAY PIPES
EXCAVATION FOR ALL PIPE IS INCLUDED IN THE 1961 SPECIFICATIONS IN THE PRICE BID FOR THE PERTINENT PIPE ITEM. THE INTENT IS NOT TO DUPLICATE PAYMENT FOR PIPE EXCAVATION WHERE SAME HAS ALREADY BEEN INCLUDED IN ITEM E-1 ROADWAY EXCAVATION. ATTENTION IS SPECIFICALLY DIRECTED TO PIPE FOR DRIVEWAYS WHERE EXCAVATION IS NORMALLY PAID FOR IN ITEM E-1, AND NO DEDUCTIONS WILL BE MADE FROM E-1 WHERE DRIVE PIPES ARE TO BE LAID IN THE DITCH EXCAVATED UNDER ITEM E-1.

CONNECTIONS TO EXISTING PIPE
AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED DRAINAGE PIPE TO BE CONNECTED TO EXISTING PIPES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED PIPE. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT PIPE ITEM.

REMOVAL OF HOUSE DRAINS (EXISTING)
THE REMOVAL OF ALL EXISTING HOUSE CONNECTIONS, WHICH INCLUDES SANITARY, YARD, ROOF, BASEMENT OR OTHER SIMILAR PIPE DRAINS WITHIN THE ROADWAY CONSTRUCTION LIMITS SHALL BE CLASSIFIED AND PAID FOR AS ITEM E-1, ROADWAY EXCAVATION, UNLESS OTHERWISE ITEMIZED FOR PAYMENT IN THE PLANS.

EROSION CONTROL
ITEMS I-10, I-14, AND L-120 ARE PROVIDED IN THESE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

SKEWED CULVERT ENDS
WHERE REQUIRED BY THE STRUCTURE DETAILS, THE SKEWED END SECTIONS OF CULVERT (AND/OR SEWER) PIPE SHALL BE SPECIALLY FABRICATED BY THE MANUFACTURER. THE SHORT SIDE OF ANY SPECIALLY FABRICATED PIPE SECTION SHALL NOT BE LESS THAN TWO (2) FEET LONG.

GUARD RAIL ADJUSTMENT
THE STATIONING OF INDIVIDUAL RUNS OF GUARD RAIL SHALL BE ADJUSTED, IF NECESSARY, BY THE ENGINEER AT THE TIME OF CONSTRUCTION TO ACCOMMODATE THE STANDARD PANEL LENGTHS FURNISHED.

ITEM SPECIAL, DRILLED WELL ABANDONED
THE EXISTING CONCRETE OR STONE SLAB WELL COVER SHALL BE REMOVED AND DISPOSED OF. THE PUMP AND ALL OTHER SALVAGEABLE PARTS SHALL BE CAREFULLY REMOVED AND STORED ON THE ABUTTING PROPERTY.

THE CASING SHALL BE CUT OFF AT LEAST TWO FEET BELOW THE PROPOSED FINISHED GRADE OUTSIDE PAVEMENT AREAS OR AT LEAST TWO FEET BELOW THE PROPOSED SUBGRADE ELEVATION INSIDE PROPOSED PAVEMENT AREAS AND CAPPED WITH CLASS "E" CONCRETE OR A STANDARD THREADED PIPE CAP.

THE UNIT PRICE BID FOR EACH "DRILLED WELL ABANDONED" SHALL INCLUDE PAYMENT FOR ALL LABOR, TOOLS, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. Est. QUANT. 5 Each. to Gen. Sum.

SEEDING
INTERSTATE
QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE RIGHT-OF-WAY FENCE LINES, BETWEEN THE RIGHT-OF-WAY LINES IN UNFENCED AREAS, AND WITHIN THE WORK LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT.

SIDE ROADS
QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS.

SEEDING FORMULA
THE FOLLOWING SEED MIXTURES SHALL, IN LIEU OF THE MIXTURES LISTED IN SECTION L-9.11 BE USED THROUGHOUT THE LIMITS OF THIS PROJECT:

SEED MIXTURE TO BE USED ADJACENT TO RESIDENTIAL AREAS OR AT THE DIRECTION OF THE ENGINEER:

40% KENTUCKY BLUEGRASS (POA PRATENSIS)
45% ILLAHEE FESCUE (FESTUCA RUBRA VAR. ILLAHEE)
10% RED TOP (AGROSTIS ALBA)
5% WHITE CLOVER (TRIFOLIUM REPENS)

ALL REMAINING AREAS SHALL BE SEEDED WITH THE FOLLOWING MIXTURE :

25% KENTUCKY BLUEGRASS (POA PRATENSIS)
65% KENTUCKY 31 FESCUE (FESTUCA ELATIOR VAR.KY.31)
10% RED CLOVER (TRIFOLIUM PRATENSE)

THE ABOVE SHALL BE THOROUGHLY MIXED AND THEN EVENLY SOWN OVER THE AREAS AT THE RATE OF THREE (3) POUNDS PER 1,000 SQUARE FEET IN ACCORDANCE WITH ITEM L-9 OF CONSTRUCTION AND MATERIALS SPECIFICATIONS.

ITEM T-10, AS PER PLAN
THE WEIGHTS TO BE USED IN CALCULATING THE YARDAGE TO BE PAID FOR UNDER THIS ITEM SHALL BE THE SAME AS THOSE INDICATED IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR CRUSHER RUN OR BANK RUN MATERIALS. Est Quantity 350 Cu.Yds.

PRIVATE SEWER TAPS
THIS PLAN MAKES NO PROVISION FOR CONNECTING, NOR SHALL THE ENGINEER OR CONTRACTOR CONNECT, ANY EXISTING OR NEW PRIVATE DRAINAGE TO THE NEW HIGHWAY DRAINAGE SYSTEM WHEN SUCH PRIVATE DRAINS CARRY EFFLUENT OR DRAINAGE FROM LEACHING BED OUTLETS, CELLAR DRAINS, OR SINK DRAINS, OR POLLUTED WATER OF ANY KIND. CONNECTIONS MAY BE MADE TO EXISTING OR NEW HIGHWAY DRAINAGE SYSTEM WHEN THE WATER CARRIED TO THE PROJECT DRAINAGE SYSTEM DOES NOT COME WITHIN THE CATEGORY OUTLINED ABOVE. ACCEPTABLE WATER INCLUDES FLOW FROM ROOF DRAINS, FIELD DRAINS, AND ENCLOSED NATURAL DRAINAGE SOURCES WHICH WOULD REACH THE ROAD THROUGH NATURAL CHANNELS IF SUCH WATER WAS NOT CONDUCTED ARTIFICIALLY. EXISTING SEWER TAPS WHICH DO NOT CARRY ACCEPTABLE WATER AS DEFINED ABOVE SHALL BE PLUGGED AT THE RIGHT-OF-WAY LINE. PLUGGING SPECIFIED SHALL BE BY MEANS OF CLASS "E" CONCRETE AND PAYMENT THEREFORE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY, FOR USE AS DIRECTED BY THE ENGINEER, IN MAKING THE ABOVE DESCRIBED CONNECTIONS:

ITEM I-1 6 " PIPE, CLASS E-1 300 LIN. FT.
ITEM I-5 6 " PIPE SPECIALS, CLASS E-1 5 EACH

SIDE ROADS
ANY EXISTING SANITARY DRAIN FROM BUILDINGS, LEACHING BEDS, ETC., WHICH WILL BE DISTRIBUTED BECAUSE OF THE HIGHWAY IMPROVEMENT, SHALL BE PLUGGED AT THE RIGHT-OF-WAY LINE UNLESS WRITTEN APPROVAL FOR DISCHARGING INTO THE NEW OR EXISTING HIGHWAY DRAINAGE SYSTEM IS GIVEN BY THE COUNTY BOARD OF HEALTH. NO SUCH UNAPPROVED DRAINAGE SHALL BE PERMITTED TO DISCHARGE INTO THE STORM DRAINAGE SYSTEM OR ROADWAY DITCHES. PLUGGING SPECIFIED SHALL BE BY MEANS OF CLASS "E" CONCRETE AND PAYMENT THEREFOR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1 ROADWAY EXCAVATION.

SPECIAL SEEDING PREPARATION AREAS
THE REFERENCE IN THE FIRST PARAGRAPH OF SEC. L-9.11 TO PREPARATION OF THE SEED BED IN FRONT OF RESIDENCES, ETC., SHALL, ON THIS PROJECT, BE CONSIDERED TO BE PARTICULARLY APPLICABLE IN THE FOLLOWING AREAS:

STATION 14 + 65 TO 16 + 00 on Brookville Phillipsburg Road
STATION 16 + 80 TO 20 + 70 on Wellbaum Road
STATION 62 + 00 TO 64 + 00 on Brookville Salem Road
STATION 71 + 00 TO 72 + 11 on Brookville Salem Road

GUARD RAIL FLARES
WHERE PROPOSED GUARD RAIL FLARES ARE CONSTRUCTED OF RAIL ELEMENTS WHICH HAVE NOT BEEN FABRICATED EXACTLY TO FIT THE CURVATURE SHOWN ON THE PLANS, THE TWO END POSTS OF EACH FLARED SECTION SHALL BE ENCASED IN A MINIMUM OF 4-INCH THICKNESS OF CLASS "E" CONCRETE FOR THE FULL DEPTH OF THE POST BELOW THE GROUND LINE. PAYMENT FOR ENCASEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE GUARD RAIL.

PIPE CULVERT
WHEN BELL AND SPIGOT PIPE IS USED, ANY NECESSARY PIPE CUT-OFFS WILL BE MADE AT THE SPIGOT END OF THE LENGTH OF PIPE ADJACENT TO THE END LENGTH. WHEN TONGUE AND GROOVE PIPE IS USED, THE LENGTH OF PIPE NEXT TO THE END LENGTH SHALL BE CUT AND A BUTT JOINT FORWED WITH A COLLAR AS SHOWN ON STANDARD DRAWING I-1. THE COST OF THE JOINT AND COLLAR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR THE PERTINENT PIPE ITEM.

SEQUENCE OF CONSTRUCTION OPERATIONS. UNDERDRAINS SHALL BE INSTALLED AND BACKFILLED TO SUBGRADE ELEVATION, IMMEDIATELY PRIOR TO CONSTRUCTION OF THE SUBBASE, EXCEPT THAT, WHERE SUBSURFACE CONDITIONS ARE SUCH THAT IMPROVEMENT OF AN UNSTABLE SUBGRADE CAN BE ACCOMPLISHED THROUGH THE DRYING ACTION OF DEEP UNDERDRAINS, THE PROJECT ENGINEER MAY AUTHORIZE OR REQUIRE THE CONTRACTOR TO DELAY THE CONSTRUCTION OF THE SUBBASE AS NECESSARY.

THE SUBBASE SHALL THEN BE CONSTRUCTED UNDER THE CONCRETE PAVEMENT AREA AND EXTENDED OUT TO COVER THE POROUS BACKFILL FOR THE UNDERDRAIN. PAVEMENT SHALL THEN BE CONSTRUCTED.

AFTER THE SUBBASE IN THE SHOULDER AREA IS IN PLACE AND COMPACTED AS SPECIFIED, AND IMMEDIATELY PRIOR TO PLACING THE POROUS BASE COURSE, THE MATERIAL LOCATED ABOVE AND WITHIN THE UNDERDRAIN TRENCH SHALL BE REMOVED TO THE DEPTH NECESSARY TO EXPOSE CLEAN CLASS 3 BACKFILL. THE TRENCH SO EXCAVATED SHALL BE BACKFILLED WITH NEW CLASS 3 BACKFILL MATERIAL,

IF, AFTER TESTING THE SUBBASE MATERIAL FOR COMPOSITION IN THE SHOULDER AREA, IT IS FOUND THAT REMOVAL OF CONTAMINATED MATERIAL FROM THE SURFACE IS NECESSARY, SUCH CONTAMINATED MATERIAL REMOVED FROM THE SURFACE SHALL BE REPLACED WITH MATERIAL MEETING THE REQUIREMENTS OF ITEM B-112, POROUS BASE COURSE AT THE EXPENSE OF THE CONTRACTOR.

POROUS BASE COURSE SHALL THEN BE CONSTRUCTED AND CONSTRUCTION OF THE WATERPROOFED AGGREGATE COURSE SHALL FOLLOW IMMEDIATELY.

RIGHT-OF-WAY FENCE
FENCE SHALL BE TYPE "D". FOR LOCATION, SEE RIGHT-OF-WAY PLANS. (Not part of this Contract.)

GUARD RAIL REMOVAL
THE REMOVAL OF ANY GUARD RAIL OR GUARD RAIL POSTS LYING WITHIN THE LIMITS OF ROADWAY EXCAVATION OR EMBANKMENT (AND NOT SPECIFICALLY PAID FOR UNDER A SEPARATE ITEM) IS INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION. ALL RESULTING MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM AT NO EXTRA COST TO THE STATE, EXCEPT THAT THE STEEL RAIL ON ALL EXISTING STEEL BEAM TYPE OR STEEL CABLE ON STEEL CABLE TYPE GUARD RAILS SHALL BE STORED ON THE RIGHT-OF-WAY AT THE DISPOSAL OF THE STATE.

L-9 COMMERCIAL FERTILIZER
ALL AREAS TO BE SEEDED UNDER ITEM L-9, OR SODDED UNDER ITEM L-10, SHALL HAVE COMMERCIAL FERTILIZER 12-12-12, APPLIED AT THE RATE OF TWENTY (20) POUNDS PER 1,000 SQ. FT.

AGRICULTURAL LIMING MATERIALS
THE LOCATION AND NEED FOR AGRICULTURAL LIMING MATERIALS WILL BE DETERMINED BY LABORATORY TESTS AFTER ROUGH GRADING OPERATIONS HAVE BEEN PERFORMED. QUANTITIES OF AGRICULTURAL LIMING MATERIALS AS SHOWN ON THE PLANS ARE SUFFICIENT FOR THE ENTIRE PROJECT, BUT WILL BE NONPERFORMED FOR THE AREAS WHERE TESTS SHOW THAT THE LIMING MATERIAL IS NOT NEEDED. WHERE USED THIS MATERIAL SHALL BE APPLIED AT THE RATE OF 100 LBS. PER 1000 SQ. FT.

REMOVAL OF EXISTING PIPE
THE REMOVAL OF ALL EXISTING PIPE DRAINS WITHIN THE LIMITS OF PROPOSED EXCAVATION ITEMS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED IN THE PLANS.

PART WIDTH CONSTRUCTION
BECAUSE OF THE NECESSITY OF BUILDING THIS PROJECT UNDER TRAFFIC AND CONSTRUCTING THE PAVEMENT PART AT A TIME, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT ON CENTERLINE IN THE B-19 AND I-22 COURSES.

THIS SHALL BE ACCOMPLISHED BY BUILDING THE B-19 AND I-22 COURSES, PLACED WITH THE FIRST PORTION OF THE PAVEMENT BUILT, AT LEAST EIGHTEEN (18) INCHES BEYOND THE CENTERLINE AND BY SURFACING NO CLOSER THAN EIGHTEEN (18) INCHES TO THIS EDGE OF THE ABOVE COURSES. WHEN THE SECOND PORTION OF THE PAVEMENT IS BUILT, AT LEAST TWELVE (12) INCHES OF THESE PROJECTING COURSES SHALL BE BROKEN DOWN AND THOROUGHLY KEYED IN WITH THE NEWLY PLACED CORRESPONDING COURSES IN THE SECOND PORTION OF THE PAVEMENT BUILT. PAYMENT FOR THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PERTINENT PAVEMENT ITEMS.

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MONTGOMERY COUNTY
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GENERAL NOTES

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS:-
THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS AT EACH OF THE FOLLOWING LOCATIONS:

1. ON THE EAST SIDE OF SR 311 AT APPROXIMATE STA. 24+35
2. ON THE WEST SIDE OF SR 311 AT APPROXIMATE STA. 47+55
3. ON THE NORTH SIDE OF US# 40 AT APPROXIMATE STA. 343+00

SIGN DETAILS SHALL BE AS SPECIFIED ON STANDARD DRAWING FACI-1, "CODE N-43(2) 144", AND THE SIGNS SHALL BE ERECTED IN ACCORDANCE WITH STANDARD DRAWING FACI-2. ADDITIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH NOTES IN THE PROPOSAL.

ITEMS S.S. CE-101.04 COMPACTION USING HEAVY PNEUMATIC-TIRED ROLLER -
AN ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN PROVIDED IN THE GENERAL SUMMARY, FOR USE AS DIRECTED BY THE ENGINEER, IN PROOF ROLLING OF ALL SUBGRADE EXCEPT FOR AREAS WHERE ROCK OR SHALE IS ENCOUNTERED. THE PNEUMATIC-TIRED ROLLER SHALL BE OPERATED AT 50-TON GROSS LOAD FOR THE FINAL PROOF ROLLING.

REINFORCED ENDS FOR CLASS F-1 PIPE:
REINFORCED ENDS SHALL BE PROVIDED FOR ALL CORRUGATED METAL CLASS F-1 (EXCEPT HELICAL) PIPES FOR DRIVEWAYS AND PIPE OUTLETS, IF PIPE ENDS ARE UNPROTECTED BY HEADWALLS, CATCH BASINS OR MANHOLES.

LOCATION AND SIZE OF PIPES
THE LOCATION, TYPE, DEPTH AND SIZE OF ALL EXISTING PIPES ARE SHOWN AS NEAR EXACT AS THE AVAILABLE INFORMATION WILL PERMIT. THE STATE WILL NOT BE RESPONSIBLE FOR ANY VARIATIONS FOUND DURING CONSTRUCTION.

MAINTENANCE OF TRAFFIC
THE FOLLOWING IS A SUGGESTED SEQUENCE OF OPERATIONS TO MAINTAIN CROSS ROAD TRAFFIC.

TRAFFIC ON STATE ROUTE 311 MAY BE DETOURED AS SHOWN ON SHEET 1. THE PERIOD OF USE OF THIS DETOUR SHALL BE KEPT TO AN ABSOLUTE MINIMUM CONSISTENT WITH THE REQUIREMENTS OF THESE PLANS. TWO-WAY TRAFFIC SHALL BE MAINTAINED ON S. R. 311 AT ALL TIMES THE DETOUR IS NOT IN EFFECT, USING EITHER THE EXISTING OR PROPOSED PAVEMENT AND STRUCTURES. *Detour for S.R. 311 shall be limited to a minimum period of 180 consecutive Calendar days.*

UPPER LEWISBURG-SALEM ROAD SHALL BE KEPT OPEN AND TRAFFIC MAINTAINED THEREON UNTIL THE RELOCATION OF THIS ROAD TO S. R. 311 IS COMPLETED AND OPEN TO TRAFFIC.

DURING THE CONSTRUCTION OF THE PROPOSED BRIDGES OVER RELOCATED UPPER LEWISBURG-SALEM ROAD, THE CONTRACTOR SHALL SAFEGUARD THE TRAVELING PUBLIC ON THIS ROAD BY PROVIDING PLATFORMS, NETS, OR OTHER SUITABLE PROTECTION ABOVE THE TRAVELED LANES.

BROOKVILLE-PHILLIPSBURG ROAD SHALL BE KEPT OPEN AND TRAFFIC MAINTAINED THEREON UNTIL THE SEPARATION STRUCTURE AND APPROACHES ON S. R. 311 ARE COMPLETED AND OPEN TO TRAFFIC.

WELLBAUM ROAD SHALL BE KEPT OPEN AND TRAFFIC MAINTAINED THEREON UNTIL THE SEPARATION STRUCTURE AND APPROACHES ON BROOKVILLE-SALEM ROAD ARE COMPLETED AND BROOKVILLE-SALEM ROAD IS OPEN TO TRAFFIC.

CLOSURES OF ALL CROSS ROADS DURING CONSTRUCTION OF THE RESPECTIVE SEPARATION STRUCTURES AND APPROACHES SHALL BE KEPT TO A MINIMUM DURATION AND TWO-WAY TRAFFIC SHALL BE MAINTAINED ON ALL INTERSECTING ROADS WHEREVER AND WHENEVER POSSIBLE CONSISTENT WITH THE REQUIREMENTS OF THESE NOTES. THE LIMITS AND DURATION OF USE OF TEMPORARY ROADWAYS SHALL ALSO BE HELD TO AN ABSOLUTE MINIMUM. IN ALL CASES, PROVISIONS FOR TRAFFIC MAINTENANCE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

ANY ROAD OR ROADS WHICH ARE TO BE PERMANENTLY CUL-DE-SACED BY THIS PROJECT, SHALL NOT BE CLOSED TO TRAFFIC UNTIL THE TURNAROUND INDICATED IN THE PLAN HAS BEEN CONSTRUCTED AND CAN BE PUT TO USE.

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE ACCESS FOR LOCAL TRAFFIC AT ALL TIMES IN COMPLIANCE WITH SECTION G-4.05 OF THE SPECIFICATIONS.

TRAFFIC COMPACTED SURFACE COURSE ITEM T-10, AND CALCIUM CHLORIDE, ITEM M-10 SHALL BE APPLIED ON TEMPORARY ROADWAYS AS DIRECTED AND IN THE AMOUNTS REQUESTED BY THE ENGINEER (SEE GENERAL SUMMARY OF QUANTITIES). *Est. Quant. T-10 650 Cu. Yd. ; M-10 20 Tons*

THE HARDNESS AND SOUNDNESS REQUIREMENTS OF THE SPECIFICATIONS SHALL BE WAIVED ON ALL T-10 MATERIALS USED FOR MAINTENANCE OF TRAFFIC.

PAYMENT FOR ALL OF THE ABOVE, INCLUDING CONSTRUCTION, MAINTENANCE, AND SUBSEQUENT REMOVAL, WHEREVER REQUIRED, OF TEMPORARY ROADWAYS, EXCEPT FOR FURNISHING AND PLACING OF ITEM M-10, T-10, AND "T-35 FOR MAINTAINING TRAFFIC", SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MAINTAINING TRAFFIC". *Est. Quant. T-35 20 Cu. Yd.*

LIGHTS, SIGNS, AND BARRICADES
THE CONTRACTOR SHALL, IN CONJUNCTION WITH THE GENERAL REQUIREMENTS OF SEC. G-7.07, ON THIS PROJECT PERFORM THE FOLLOWING:

(A) PROVIDE, ERECT, AND MAINTAIN MOVABLE GATES ON INTERSECTING ROADS CLOSED TO TRAFFIC AT ALL POINTS WHERE LOCAL TRAFFIC MOVEMENT TERMINATES.
(B) PROVIDE, ERECT, AND MAINTAIN LIGHTS, SIGNS, AND BARRICADES AT THE WORK LIMITS ON ALL INTERSECTING ROADS WHICH REMAIN OPEN TO TRAFFIC.
(C) PROVIDE, ERECT, AND MAINTAIN STANDARD 40"X 24"SIZE "ROAD CLOSED" SIGNS, SIGN SUPPORTS, AND LIGHTS AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.
   1. BROOKVILLE-PHILLIPSBURG PIKE JUST SOUTH OF PLEASANT PLAIN ROAD INTERSECTION.
   2. BROOKVILLE-PHILLIPSBURG PIKE JUST NORTH OF UPPER LEWISBURG-SALEM ROAD INTERSECTION.
   3. WELLBAUM ROAD JUST SOUTH OF PLEASANT PLAIN ROAD INTERSECTION.
   4. WELLBAUM ROAD JUST NORTH OF BROOKVILLE-SALEM PIKE INTERSECTION.
   5. BROOKVILLE-SALEM PIKE JUST WEST OF S. R. 49 INTERSECTION.
   6. BROOKVILLE-SALEM PIKE JUST EAST OF WELLBAUM ROAD INTERSECTION.

ALTERNATE METHODS
IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR.

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MONTGOMERY COUNTY
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EARTHWORK

	STATION TO STATION	EXCAVATION	EMBANKMENT	EMBANKMENT +12%
		CU. YDS.	CU. YDS.	CU. YDS.
18	144+00 150+00	1,115	34,735	38,903
19	150+00 160+00	2,292	173,565	194,393
20	160+00 170+00	2,224	193,699	216,943
21	170+00 180+00	15,358	17,384	19,470
22	180+00 190+00	6,210	13,867	15,531
23	190+00 200+00	97,900	4	4
24	200+00 210+00	129,950	0	0
25	210+00 220+00	109,000	0	0
26	220+00 230+00	24,980	2,948	3,302
27	230+00 240+00	7,404	10,534	11,798
28	240+00 250+00	8,702	15,050	16,856
29	250+00 260+00	6,576	4,326	4,845
30	260+00 270+00	10,303	4,335	4,855
31	270+00 280+00	16,315	4,638	5,195
33	280+00 290+00	7,945	5,367	6,011
35	290+00 300+00	12,940	14,998	16,798
	300+00 310+00	7,741	20,791	23,286
36	310+00 315+00	3,098	11,488	12,867
37	315+00 325+00	11,843	11,750	13,160
38	325+00 340+00	23,394	1,515	1,697
39	340+00 350+00	1,919	1,454	1,628
40	350+00 360+00	264	794	889
	360+00 370+00			
	S.R. 311	2,223	77,041	86,286
	RAMP "A"	3,258	19,517	21,859
	RAMP "B"	622	20,312	22,749
	RAMP "C"	1,265	11,184	12,526
	RAMP "D"	6,486	17,133	19,189
	S.R. 49			
	RAMP "A"	1,497	9,880	11,065
	RAMP "B"	807	3,960	4,435
	RELOC. UPPER LEWISBURG-SALEM RD.	9,526	7,762	8,694
	BROOKVILLE-PHILLIPSBURG ROAD	3,407	44,705	50,070
	WELLBAUM ROAD	2,515	39,719	44,485
	BROOKVILLE-SALEM ROAD	1,915	56,599	63,391
	S.R. 311 (INTER. AUX.)	11,978	0	0
	RELOC. WOLF CREEK		8,100	9,072
	BROOKVILLE-SALEM ACCESS RD.	121	1,406	1,575
	BROOKVILLE-PHILLIPS. ACCESS RD.	12	2,615	2,929
	WELLBAUM RD. CHANNEL		763	855
	APP. UPPER LEWISBURG-SALEM	348	821	920
	SUB TOTAL	553,453		
	DEDUCT FOR L-1	23,544		
	TOTAL	529,909	864,759	968,531

EROSION CONTROL

L-9 SEEDING AND PROTECTING	L-9 COMMERCIAL FERTILIZER 12-12-12	L-9 AGR. LIMING MATERIAL	E-11 WATER
SQ. YDS.	TONS	TONS	M GAL.
14,822			
24,642			
27,023			
19,794			
26,776			
27,856			
30,264			
29,742			
24,789			
24,177			
25,759			
25,652			
27,342			
31,410			
35,450			
25,289			
22,805			
19,598			
19,916			
10,216			
6594			
2620			
24,000(Est)			
10,405			
7,987			
12,122			
12,874			
10,863			
5,031			
23,500(Est.)			
23,600(Est.)			
20,800(Est.)			
20,700(Est.)			
5,966			
5,500(Est.)			
2,700(Est.)			
5,400(Est.)			
900(Est.)			
700,884	63.7	318.5	4843

PAVEMENT CALCULATIONS

TYPICAL SECTION	T-71	T-35			B-35		T-31		T-30	I-22		B-112	B-19		B-21		I-9
	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	1½" ASPHALTIC CONCRETE SURFACE COURSE TYPE "A" (65-100)	1¼" ASPHALTIC CONCRETE SURFACE COURSE TYPE "C" (65-100)	1" ASPHALTIC CONCRETE SURFACE COURSE TYPE "C" (70-85)	2"	1½" ASPHALTIC CONCRETE LEVELING COURSE 35-100	1½" LEVELING COURSE 70-85	BITUMINOUS SURFACE TREATMENT 0.008 CY. No. 6 AGGREGATE PER SQ. YD.	0.25 GAL. BITUMINOUS MATERIAL PER SQ. YD.	BITUMINOUS PRIME COAT SEC. M-5.7, RT-2 OR RT-3 0.4 GAL. per S.Y.	SUBBASE GRADING A or B 6"	4"	POROUS BASE COURSE	AGGREGATE BASE COURSE 4"	5"	WATERPROOFED AGGREGATE BASE COURSE 2½"	3"	STONE UNDERDRAINS No. 2
	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.		CU. YDS.	CU. YDS.	CU. YDS.	GALS	GALS	CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	L.F.
"A"	5,884							28	858		1,552		454				286	
"B"	26,453							88	2,730		6,217		1,471				910	
"C"	28,615							132	4,117		7,513		2,177				1,373	
"D"	48,949							210	6,549		12,524		3,476				2,183	
"E"	7,919							37	1,156		2,090		609				589	
#311 RAMPS "F","G" & "H"	9,432							31	959		2,212		426				507	
#49 RAMPS "F","G" & "H"	4,462							14	458		1,049		202				243	590
RELOC. LEWB'G-SALEM "I","K"		257								2,604				1,495				828
S.R. 311 "L"				144			442					599			721			528
BRKV'LE-PHLPSB'G RD. "N"			118			169				1,389		414		494				360
WELLBAUM RD. "J"		115								1,170			672					372
BRKV'LE-SALEM RD. "M","O"			167			239				2,005		580		697				487
	131,714	372	285	144		408	442	540	16,827	7,168	33,157	1,593	8,815	2,167	1,191	721	6,091	3,165

LINE DATA CALCULATIONS FOR APPROACHES

RELOCATED LEWISBURG-SALEM ROAD
Begin Work Sta. 22+09.50
End Work Sta. 52+17.73
Net Length of Work 3,008.23 Lin. Ft.

S.R. 311
Begin Work Sta. 24+35
End Work Sta. 47+55
Net Length of Work 2,320 Lin. Ft.

BROOKVILLE-PHILLIPSBURG ROAD
Begin Work Sta. 11+50
End Work Sta. 30+40
Net Length of Work 1,890 Lin. Ft.

WELLBAUM ROAD
Begin Work Sta. 15+59
End Work Sta. 34+00
Net Length of Work 1,841 Lin Ft.

BROOKVILLE-SALEM ROAD
Begin Work Sta. 55+25
End Work Sta. 78+25
Net Length of Work 2,300 Lin Ft.

EAST APPROACH (MAINLINE)
Sta. 342+91.50 to STA. 358+00 1,508.50 Lin. Ft.

TOTAL NET LENGTH WORK···APPROACHES
12,867.73 Lin. Ft.

TYPICAL SECTION	I-9 Stone Underdrains No. 2 Lin. Ft.
TOTAL FED. PART.	
TOTAL STATE PART.	

TOPSOIL		
TYPICAL SECTION	L-1 TOPSOIL STOCKPILED	L-3 PLACING STOCKPILED TOPSOIL
	C.Y.	C.Y.
Section 'A'	1,007	899
Section 'B'	3438	3070
Section 'C'	4857	4337
Section 'D'	7970	7116
GENERAL NOTES (EST.)	6272	5600
TOTAL	23,544	21,022

E-4 BORROW

E-1 ROADWAY EXCAVATION	529,909	C.Y.
Estimated Available Channel Excavation	6,000	
Total	535,909	
Embankment +12%	968,531	C.Y.
E-4 BORROW	432,622	

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SUB SUMMARY

* NO FEDERAL PARTICIPATION

TYPE CODE 7221

ITEM	SHEET NUMBER																				TOTAL			
	125	128	129	130	134	*134	135	*135	137	138	139	143A	144	145	149	150	152	156	*156	173	ITEM	NORM. PART/C	NO. FED. PARTIC.		DESCRIPTION
I-15										1425			1282.5	292.5	700						I-15	3800		Lin.Ft.	Guard Rail Steel Beam Standard Type (Deep)
L-10			68										5.3							12.5	L-10	246		Sq.Yds.	Sodding
L-10			103							226			94								L-10	423		Sq.Yds.	Sodding, Special Berm and Slope Protection, As Per Plan
E-3	6160																				E-3	6160		cu.Yds.	Channel Excavation
E-12			84						60	40			134								E-12	318		Lin.Ft.	Pipe Removed 15" And Under
I-1															24						I-1	24		Lin.Ft.	6" Pipe Sec. M-6.6 (b) OR Sec. M-6.8 (b) Class A-1
I-1			98																		I-1	98		Lin.Ft.	30" Pipe Sec. M-6.6 (b) OR Sec. M-6.8 (b), Class A-1
I-1																				190	I-1	190		Lin.Ft.	168" Pipe Sec. M-6.4 (G) 5-3 Gage Class A-1
I-1			128																		I-1	128		Lin.Ft.	30" Pipe Sec. M-6.6 (d) Class A-1
I-1													124							126	I-1	250		Lin.Ft.	21" Pipe Sec. M-6.6 (d) Class A-1
I-1																				100	I-1	100		Lin.Ft.	36" Pipe Sec. M-6.6 (c) OR Sec. M-6.4 (d) Class A-1
I-1														10							I-1	10		Lin.Ft.	6" Pipe Class F-1
I-1															10						I-1	10		Lin.Ft.	8" Pipe Class F-1
I-1	100																				I-1	100		Lin.Ft.	10" Pipe Class F-1
I-1		100	106						144			52	20					108			I-1	530		Lin.Ft.	12" Pipe Class F-1
I-1	10				42									38				70			I-1	160		Lin.Ft.	15" Pipe Class F-1
I-1														16.6							I-1	166		Lin.Ft.	21" Pipe Class F-1
I-1													204								I-1	204		Lin.Ft.	12" Pipe Class H-2
I-1															1088	325	250				I-1	1663		Lin.Ft.	6" Pipe Class I-3
I-1																	47.6				I-1	476		Lin.Ft.	6" Pipe Class I-3 (Deep)
I-2			16.6										8.8	0.7						69.0	I-2	95.1		cu.Yds.	Masonry
I-5															2						I-5	2		Each	6" Pipe Specials, Class A-1
I-5															1						I-5	1		Each	6" Pipe Specials, Class I-3
I-8			1																		I-8	1		Each	Standard N° 2-2-B Catch Basin
I-10	65																			18.1	I-10	83.1		cu.Yds.	Dumped Rock Channel Protection
I-10																				50.1	I-10	50.1		Sq.Yds.	Riprap, Using 6" Reinforced Concrete slab
S-24										Lump											S-24	Lump		Lump	Removal of Existing Structures, as per plan
B-19			105.8		35.5.6	88.9	335.8	84.0	55.1	24.7		230.5		101.1				120.1	305.9		B-19	1328.7	478.8	cu.Yds.	Aggregate Base Course
T-35			14.3			111.1		104.9	12	4		5.7		8.6				5.7	91.4		T-35	50.3	307.4	cu.Yds.	Asphaltic Concrete Surface Course, Type "C" (70-85)
I-12															283	325					I-12	608		Lin.Ft.	Special Concrete Curb,
I-12																	103				I-12	103		Lin.Ft.	Standard Type 6 Concrete Curb
	1																								

GENERAL SUMMARY

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MOT-40-2.73

*No FEDERAL PARTICIPATION

TYPE CODE 7221

ITEM	SHEET NUMBER 9	10	11	12	14	18	19	20	21	22	23	24	25	27	28	29	30	31	32	33	34	35	36	37	38	39	97	98	99	103A	104	108	109	112	115	117	230 231	176A & B	TOTALS NORMAL PARTIC.	TOTALS NO FEDER PARTIC.
E-1			529,909																																				529,909	
E-1	227,780																																						227,780	
E-4			432,622																																				432,622	
E-9	LUMP																																						LUMP	
E-11			4,843																																				4,843	
I-8																																							1	
I-15																																					1		99	
I-15					3,800	425	183.5 *23.5	1754 *62.5	*150 STR	*150 STR				225	225				50	725	450	349	813.5	662.5	162.5 *25	150	37.5 25	500	50	12625	162.5 1050	2100	337.5	912.5	750	775		99		200	
I-125																																							20,337.5	300
I-125																																								625
I-125																																						0.25	0.25	
I-125																																						17.95	17.95	
I-125																																						3.05	3.05	
I-125																																						0.47	0.47	
I-127																																						Lump	LUMP	
I-127																																						Lump	LUMP	
I-127																																						175	175	
L-1			23544																																			195	195	
L-3			21022																																			3	3	
L-9			700884																																				23,544	
L-9			63.7																																				21,022	
L-9			318.5																																				700,884	
L-10				25																																			63.70	
L-10				423											4			7		96	9		20																318.50	
L-120						267	266	267	266	533	333	400	400	267	267	267	267	457	343	534		534	267	267		736				6. 77	96				7.					174
T-10	350																																						596	
T-10	650																																						7538	
M-10	20																																						350	
T-35	20																																						650	
SPECIAL	5																	1													1								20	
SS. C.E. 101.06																																							20	
E-10																																							7	
E-10																																							115	
E-10																																							LUMP	
E-10																																							LUMP	
E-10																																							LUMP	
E-10																																							LUMP	
E-10																																							LUMP	
E-3				6,160		3	25							4	28				77		1,364	14		73															7,761
E-12				318		272	426	260	532																					2					11					3,483
E-12															220							150					550					480	275						60
I-1	400			24						66			40																20	40									578
I-1	400																																	24		24				400
I-1	400																																							400
I-1											76																													76
I-1				250																																				250
I-1						94	174	64			92			88			124	70		160	84		192		84		120													1,346
I-1																																								60
I-1													76													60														76
I-1																																								90
I-1										76																														76

ITEM	GRAND TOTAL	UNIT	DESCRIPTION
			ROADWAY
E-1	529,909	CU.Yds.	ROADWAY EXCAVATION, METHOD "B", AS PER PLAN
E-1	227,780	SQ.YDS.	COMPACTED SUBGRADE
E-4	432,622	CU.YDS.	BORROW
E-9	LUMP	Lump	REMOVAL OF TREES AND STUMPS
E-11	4,843	M.GALS	WATER
I-8	1	EACH	STANDARD MONUMENT ASSEMBLY
I-8	99	EACH	CENTERLINE REFERENCE MONUMENTS, AS PER PLAN
I-15	200	LIN. FT.	GUARD RAIL REMOVED AND STORED
I-15	20,037.5	LIN.FT.	GUARD RAIL STEEL BEAM STANDARD TYPE (DEEP)
I-15	625	LIN.FT.	GUARD RAIL STEEL BEAM BARRIER TYPE (DEEP)
I-125	0.25	MILES	4" LANE LINES
I-125	17.95	MILES	4" EDGE LINES
I-125	3.05	MILES	6" LANE LINES AND CENTERLINES
I-125	0.47	MILES	8" CHANNELIZING LINES
I-125	LUMP	LUMP	CURB AND ISLAND MARKING
I-125	LUMP	LUMP	DIAGONAL STRIPES
I-127	175	EACH	DELINEATORS, TYPE A-1, POST MOUNTED
I-127	195	EACH	DELINEATORS, TYPE C-2, POST MOUNTED
I-127	3	EACH	DELINEATORS, TYPE C-3, POST MOUNTED
L-1	23,544	CU.YDS.	TOPSOIL STOCKPILED
L-3	21,022	CU.YDS.	PLACING STOCKPILED TOPSOIL, AS PER PLAN
L-9	700,884	SQ.YDS.	SEEDING AND PROTECTING, AS PER PLAN
L-9	63.70	TONS	COMMERCIAL FERTILIZER (12-12-12)
L-9	318.50	TONS	AGRICULTURAL LIMING MATERIAL, AS PER PLAN
L-10	174	SQ.YDS.	SODDING
L-10	596	SQ.YDS.	SODDING FOR SPECIAL BERM AND SLOPE PROTECTION, AS PER PLAN
L-120	7,538	SQ.YDS.	JUTE MATTING
T-10	350	CU.YDS.	TRAFFIC COMPACTED SURFACE COURSE, USING SIZE No.2 MATERIAL, FOR MAINTAINING TRAFFIC, AS PER PLAN
T-10	650	CU.YDS.	TRAFFIC COMPACTED SURFACE COURSE FOR MAINTAINING TRAFFIC
M-10	20	TONS	CALCIUM CHLORIDE FURNISHED AND APPLIED FOR MAINTAINING TRAFFIC
T-35	20	Cu. Yd.	ASPHALTIC CONCRETE SURFACE COURSE OR AN APPROVED BITUMINOUS PREMIXED SURFACE COURSE FOR MAINTAINING TRAFFIC
SPECIAL	7	EACH	DRILLED WELLS ABANDONED
SS. C.E. 101.06	115	HOURS	COMPACTION USING HEAVY PNEUMATIC-TIRED ROLLER
E-10	LUMP	Lump	PARCEL No. 36WL, REMOVAL OF ONE 2-STORY BRICK RESIDENCE, FRAME GARAGE, AND 2 FRAME CHICKEN-HOUSES
E-10	LUMP	Lump	PARCEL No. 40WL, REMOVAL OF ONE 1-STORY BRICK RESIDENCE, AND BRICK GARAGE
E-10	LUMP	Lump	PARCEL No. 46WL, REMOVAL OF ONE FRAME SHED
E-10	LUMP	Lump	PARCEL No. 61, REMOVAL OF ONE 1-STORY FRAME RESIDENCE AND GARAGE, ONE FRAME BARN, 4 PORTABLE HOG-HOUSES, AND 2 CHICKEN-HOUSES
E-10	LUMP	Lump	PARCEL No. 65, REMOVAL OF ONE 1½-STORY FRAME RESIDENCE
E-10	LUMP	Lump	PARCEL No. 73, REMOVAL OF 2 FRAME SHEDS
E-10	LUMP	Lump	PARCEL No. 78, REMOVAL OF 2 FRAME SHEDS, AND 1 OUTHOUSE
			DRAINAGE
E-3	7,761	CU.YDS.	CHANNEL EXCAVATION
E-12	3,483	LIN.FT.	PIPE REMOVED, 15" AND UNDER
E-12	60	LIN.FT.	PIPE REMOVED, OVER 15"
I-1	578	LIN.FT.	6" PIPE SEC. M-6.6(b) OR SEC. M-6.8(b), CLASS A-1
I-1	400	LIN.FT.	8" PIPE SEC. M-6.6(b) OR SEC. M-6.8(b), CLASS A-1
I-1	400	LIN.FT.	10" PIPE SEC. M-6.6(b) OR SEC. M-6.8(b), CLASS A-1
I-1	76	LIN.FT.	12" PIPE SEC. M-6.6(a) OR SEC. M-6.8(b), CLASS A-1
I-1	250	LIN.FT.	21" PIPE SEC. M-6.6(d), CLASS A-1
I-1	1,346	LIN.FT.	15" PIPE SEC. M-6.6(a) OR SEC. M-6.8(b), CLASS A-1
I-1	60	LIN.FT.	18" PIPE SEC. M-6.6(a), CLASS A-1
I-1	76	LIN.FT.	18" PIPE SEC. M-6.6(a) OR SEC. M-6.8(b), CLASS A-1
I-1	90	LIN.FT.	21" PIPE SEC. M-6.6(b) OR SEC. M-6.8(b), CLASS A-1
I-1	76	LIN.FT.	21" PIPE SEC. M-6.6(a) OR SEC. M-6.8(b), CLASS A-1

FED. RD. DIVISION	STATE	PROJECT	
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MOT-40-2.73

GENERAL SUMMARY

TYPE CODE 7221

ITEM	SHEET NUMBER 9,10,11	12	14	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	97	98	99	103A	104	108	109	112	115	117	118	ITEM	QUANT	UNIT	DESCRIPTION
																																							DRAINAGE (CONTINUED)
																													110							I-1	110	Lin. Ft.	24" Pipe, Class A-1, Sec. M-6.6 (c)
I-1																												66								I-1	142	Lin. Ft.	24" Pipe, Class A-1, Sec. M-6.6(a) or M-6.8(b)
I-1									76																													
I-1			128														162																			I-1	128	Lin. Ft.	30" Pipe, Class A-1, Sec. M-6.6(d)
I-1																																				I-1	162	Lin. Ft.	33" Pipe, Class A-1, Sec. M-6.6(a)
I-1																			128																	I-1	128	Lin. Ft.	36" Pipe, Class A-1, Sec. M-6.6(d)
I-1																			190																	I-1	190	Lin. Ft.	36" Pipe, Class A-1, Sec. M-6.6(b) or M-6.8(b)
I-1						302																														I-1	302	Lin. Ft.	42" Pipe, Class A-1, Sec. M-6.4(d) 8 Gage
I-1														194						224																I-1	418	Lin. Ft.	42" Pipe, Class A-1, Sec M-6.6(a)
																						188														I-1	188	Lin. Ft.	36" Pipe, Class A-1, Sec. M-6.6(a) or M-6.8(b)
I-1																						234														I-1	234	Lin. Ft.	60" Pipe, Class A-1, Sec. M-6.6(a)
I-1	300			38		38	120	464	38	38	38		36	26	26	26	26	52	152		52	26	26													I-1	300	Lin. Ft.	6" Pipe, Class E-1
I-1							86	62						10		52	10					10														I-1	1,222	Lin. Ft.	12" Pipe, Class E-1
I-1									34	38	34																									I-1	230	Lin. Ft.	15" Pipe, Class E-1
I-1									38																											I-1	106	Lin. Ft.	18" Pipe, Class E-1
I-1									38																											I-1	38	Lin. Ft.	21" Pipe, Class E-1
I-1																																				I-1	38	Lin. Ft.	24" Pipe, Class E-1
I-1	200		10	20	40	40		60	70	30	30		30	30	20	30	20	40	140	20	60	70	20													I-1	980	Lin. Ft.	6" Pipe, Class F-1
I-1	100		10	10	10			40	10	10				20	10		20	20	40	10		20	10				10		10		10	10	20		I-1	400	Lin. Ft.	8" Pipe, Class F-1, Sec. M-6.4(c)
I-1	50		100																										10							I-1	160	Lin. Ft.	10" Pipe, Class F-1
I-1	50		530																											10						I-1	804	Lin. Ft.	12" Pipe, Class F-1
I-1			160		114	82								64															124		40		60			I-1	464	Lin. Ft.	15" Pipe, Class F-1
I-1			166																												44					I-1	166	Lin. Ft.	21" Pipe, Class F-1
I-1			98																264																	I-1	98	Lin. Ft.	30" Pipe, Class A-1, Sec. M-6.6(b) or M-6.8(b)
I-1																																				I-1	264	Lin. Ft.	106" x 68" Pipe, Class G-1 Sec. M-6.7(b)
I-1																																				I-1	42	Lin. Ft.	65" x 40" Pipe, Class G-1 Sec. M-6.4(1)(c)
I-1			190																																	I-1	190	Lin. Ft.	14'-0" Pipe, Class A-1, Sec. M-6.4(g), 5-3 Gage
I-1	200																																			I-1	200	Lin. Ft.	10" Pipe, Class H-2
I-1	200		204																												238					I-1	404	Lin. Ft.	12" Pipe, Class H-2
I-1	200																																			I-1	438	Lin. Ft.	15" Pipe, Class H-2
I-1			100																														88			I-1	188	Lin. Ft.	36" Pipe, Class A-1, Sec. M-6.6(c) or M-6.4(d)
I-1			2139	2456	3082	3996	4000	4077	4069	4030	4014	4000	4010	4084	4080	4020	4044	4078	4033	3988	3988	4081	2570							1041	341	776	798	1125	451		I-1	83,371	Lin. Ft.	6" Pipe, Class I-3
I-1																																				I-1	278	Lin. Ft.	42" Pipe, Class B-1
I-2			95.1	0.3	0.5	11.5			0.7	0.3	0.3		0.2	11.3	0.3	0.3	23.2	0.5	72.6	2.2	0.5	5.9	0.3													I-2	341.5	Cu. Yd	Masonry
I-5														1																					I-5	1	Each	42" Pipe Special, Class A-1, Sec. M-6.6(a)
I-5			2					1			2											1							2				2			I-5	9	Each	6" Pipe Specials, Class A-1, Sec. M-6.6(b) or M-6.8(b)
I-5														1																					I-5	1	Each	36" Pipe Special, Class A-1, Sec. M-6.6(a) or M-6.8(b)
I-5																																			I-5	1	Each	6" Pipe Special, Class E-1
I-5										1																									I-5	1	Each	8" Pipe Special, Class F-1, Sec. M-6.4(c)
I-5																	1																			I-5	1	Each	33" Pipe Special, Class A-1, Sec M-6.6(a)
I-5					4	2																														I-5	6	Each	15" Pipe Specials, Class F-1
I-5	5																																			I-5	5	Each	6" Pipe Specials, Class E-1
I-5			1	3		2		6	7	3	2		2	4	3	3	4	6	7	1	4	4	4							1		1	1	2		I-5	71	Each	6" Pipe Specials, Class I-3
I-8																																				I-8	3	Each	Standard No. 2-2-A Catch Basins
I-8			1			1																														I-8	4	Each	Standard No. 2-2-B Catch Basins
I-8						1								1																						I-8	2	Each	Standard No. 2-4 Catch Basins, Modified as per plan

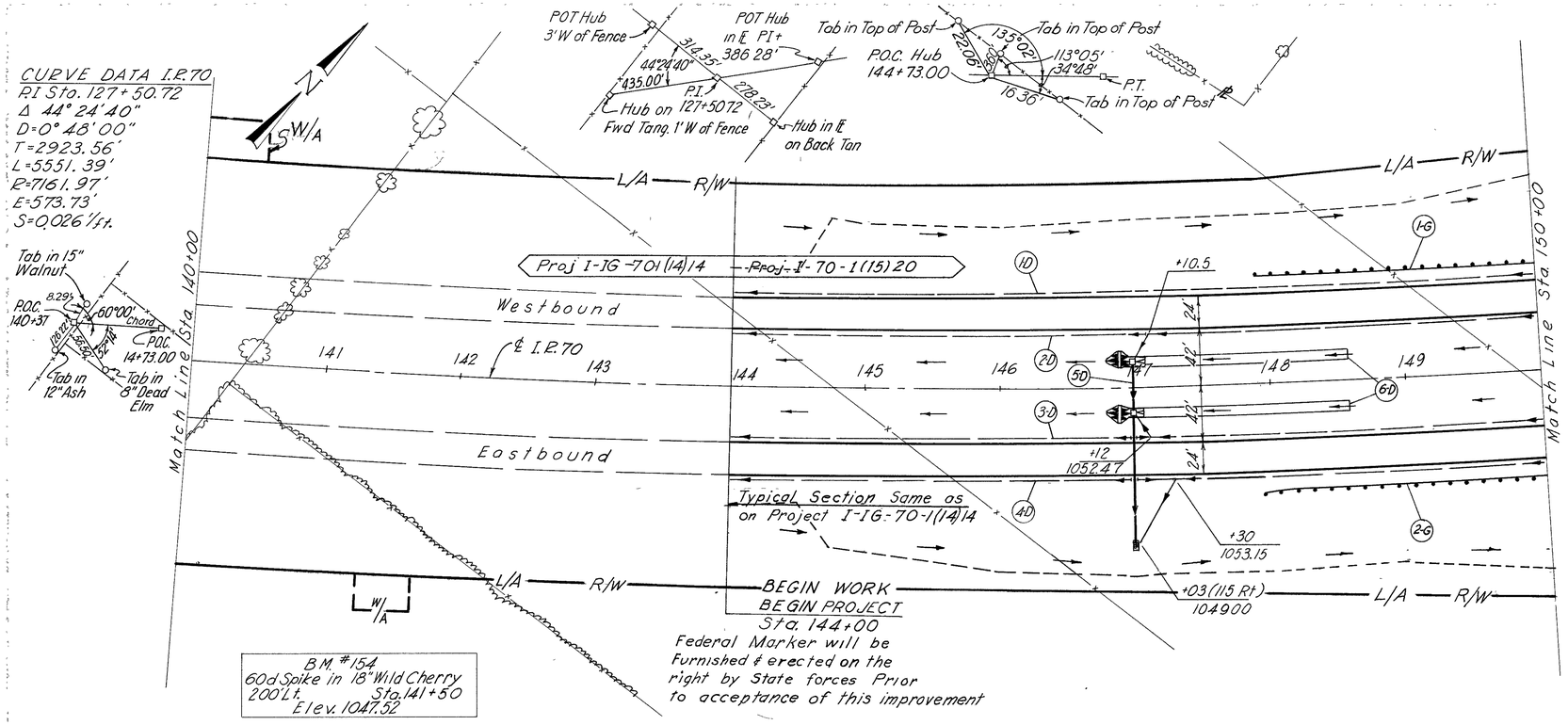
GENERAL SUMMARY

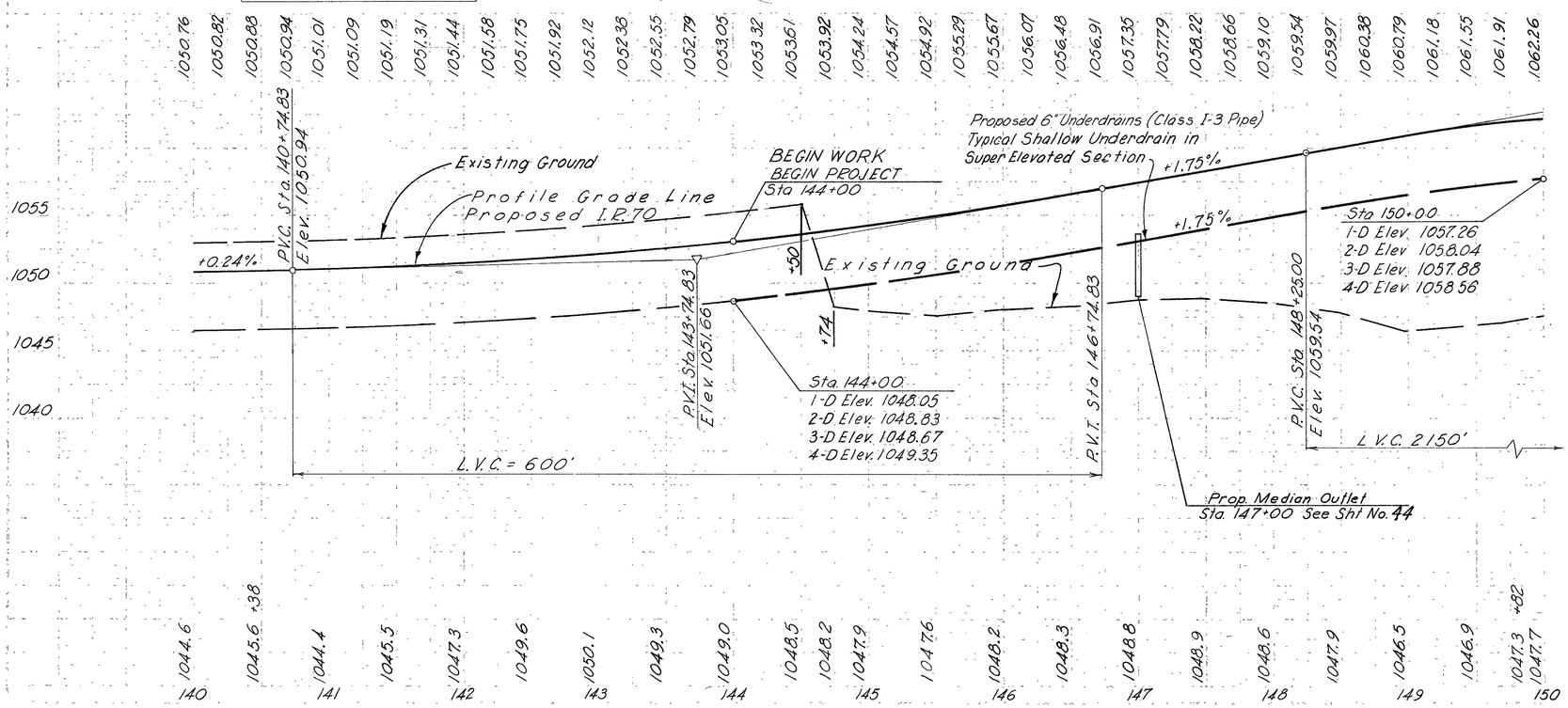
*No Federal Participation

TYPE CODE 7221

ITEM	SHEET NUMBER																																						TOTALS		ITEM	GRAND TOTAL	UNIT	DESCRIPTION
	9,10,11	12	14	14 *	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	97	98	99	103A	104	108	109	112	115	117	118	177-180	NORMAL PARTIC.	NO FED. PARTIC.				
																																												DRAINAGE (Continued)
I-8						2			2																														4		I-8	4	Each	Standard No. 4 Catch Basins
I-8									1	3	1	1					1																						7		I-8	7	Each	Standard No. 5 Catch Basins
I-8					2		2	2	2	4	2	2		2	2	2	2	2	4	4		4	2	2															42		I-8	42	Each	Standard No. 8 Catch Basins
I-8																													1										1		I-8	1	Each	Standard No. 2-3 Catch Basin
I-9	12																																						12		I-9	12	Lin.Ft	Stone Underdrains No. 1, as per plan
I-9		3,165																																					3,165		I-9	3165	Lin.Ft.	Stone Underdrains No. 2
I-10	110		83		3	2	2			5	6	2			1	1	2			73		2	35	2			2	13	4							14			362		I-10	362	Cu.Yds.	Dumped Rock Channel Protection
I-10			50												52			23		39	54		58																276		I-10	276	Sq.Yds.	Riprap Using 6" Reinforced Concrete Slab
I-16									1																														1		I-16	1	Each	Inlet Abandoned
S-24			Lump																												Lump								Lump		S-24	Lump	Lump	Removal of Existing Structures, as per plan
I-14																				214																			214		I-14	214	Lin.Ft.	Paved Gutter Standard Type 3
																																												DRAINAGE CONTINUED ON SHEET NO. 196
																																												PAVEMENT
B-19		3358	1,329	*479																							22		307		42			46					5,104	479	B-19	5,583	Cu.Yds.	Aggregate Base Course
B-21		6,812																																					6,812		B-21	6,812	Cu.Yds.	Waterproofed Aggregate Base Course, as per plan
B-35		408																																					408		B-35	408	Cu.Yds.	Asphaltic Concrete Leveling Course (85-100)
B-35		442																																					442		B-35	442	Cu.Yds.	Asphaltic Concrete Leveling Course (70-85)
B-112		8815																																					8,815		B-112	8,815	Cu.Yds	Porous Base Course
T-30		7,168																																					7,168		T-30	7,168	Gals.	Bituminous Prime Coat: Sec. M-5.7, RT-2 or RT-3
T-31		16,827																																					16,827		T-31	16,827	Gals.	Bituminous Surface Treatment-Bituminous Material, as per plan
T-31		540																																					540		T-31	540	Cu.Yds.	Bituminous Surface Treatment-No. 6 Aggregate
T-35		372																																10					382		T-35	382	Cu.Yds.	Asphaltic Concrete Surface Course Type "A" (85-100)
T-35		285																																					285		T-35	285	Cu.Yds.	Asphaltic Concrete Surface Course Type "C" (85-100)
T-35		144	50	*307																							4		80		14								292	307	T-35	599	Cu.Yds.	Asphaltic Concrete Surface Course Type "C" (70-85)
T-71		131,714																																					131,714		T-71	131,714	Sq.Yds.	9" Reinforced Portland Cement Concrete Pavement
I-7																																						1,426	1,426		I-7	1,426	Sq.Yds.	Reinforced Concrete Approach Slabs (T=13")
I-12			608																													235	341			275	452		1,911		I-12	1,911	Lin.Ft.	Special Concrete Curb
I-12			103				206		103												103														103				618		I-12	618	Lin.Ft.	Standard Type 6 Concrete Curb
I-21							14														14														14				42		I-21	42	Sq.Yds.	4" Standard Type 1 Portland Cement Concrete Median Pavement
I-22		33,157																																					33,157		I-22	33,157	Cu.Yds.	Subbase, Grading "A" or "B", as per plan
I-22		1,593																																					1,593		I-22	1,593	Cu.Yds.	Subbase
																																												FOR ESTIMATED QUANTITIES
																																												STRUCTURES OVER 20 FT. SPAN
																																												MOT 40-0296 L/R See Sheet No. 182
																																												MOT 40-0336 See Sheet No. 189
																																												MOT 40-0452 See Sheet No. 202
																																												MOT 40-0553 See Sheet No. 209
																																												MOT 40-0594 See Sheet No. 216
																																												MOT 40-0664 R See Sheet No. 225
																																							Lump	Lump		Lump	Lump	Construction Layout Stakes

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73





UTILITY OWNERS

NAME	ADDRESS
Dayton Power and Light Company	25 N. Main St. Dayton, Ohio
General Telephone Company of Ohio	Brookville, Ohio

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class 2-5(a) M.&S.(b) 15" L.F.	I-1 Pipe Class E-1 12" L.F.	I-1 Pipe Class F-1 8" L.F.	I-1 Pipe Class F-1 6" L.F.	I-1 Pipe Class I-3 Underdrains 6" Shallow L.F.	I-1 Pipe Class I-3 Underdrains 6" Deep L.F.	I-2 Masonry Headwalls Type 'E' C.Y.	I-5 Pipe Specials I-3 6"x60° wye EA.	I-5 Pipe Specials I-3 6"x60° Bend EA.	I-8 Catch Basins Std.#8 EA.	I-15 Guard Rail Steel Beam Type Standard L.F.	I-120 Jute Matting S.Y.	I-10 Dumped Rock 18" C.Y.
1-D	144+00 - 150+00	L					594								
2-D	144+00 - 150+00	L				10	605				1				
3-D	144+00 - 150+00	R				10	611			1					
4-D	144+00 - 150+00	R			10		646			1					
5-D	147+00	L&R	94	38					0.26			2		267	2.7
6-D	147+07 - 148+57	L&R													
1-G	147+91 - 150+00	L											212.5		
2-G	147+91 - 150+00	R											212.5		
			94	38	10	20	2456		0.26	2	1	2	4250	267	2.7

Drawing Reference Sheet No. 44

Excavation	1115 C.Y.
Embankment	34.735 C.Y.
Embankment +2%	38.903 C.Y.

STA 144+00 TO STA. 150+00

I-70 - 1(15)20

MONTGOMERY COUNTY
MOT. 40 - 2.73

CURVE DATA I R. 70
P.I. Sta 127+50.72
Δ 44° 24' 40"
D 0° 48' 00"
T 2923.56
L 5551.39
R 7161.97
E 573.73
S 0.026

Tab in D.P.&L. Pole #153870 P.O.T 157+42.51
28.25
283.55'
159°39'00"
180°
20°21'00"
38.78'
Best Ref for P.T. POT. PI+253.78
Ref Hub
Best Ref for P.T. Hub POT 156+62.10
P.T. Hub 153+78.55
Hub ℄ R.R. 156+90.35
Tab in A.T.&T. Pole

Trees and stumps to be removed
12" - 18" 12

℄ Relocated Upper Lewisburg-Salem Road
Exist. 12" Tile
End Ramp "A" Sta 27+48.12 ≈ Sta. 155+47.42 ℄ I.R. 70
P.T. Sta. 153+78.55
72°24'00"
Exist. 6" Tile (To be abandoned)
RAMP "A"
25+46
Westbound
Eastbound
Match Line Sta. 150+00
Match Line Sta 160+00
151 ℄ I R 70 152 153 154 155 156 157 158 159
#4 C.B. +13 Elev. 1061.94
#4 C.B. +07 Elev. 1061.68
30" C.I.P. To Be Abandoned
N-46°07'01"E
Exist. 12" Tile To be Removed
RAMP "B"
℄ Relocated Upper Lewisburg-Salem Road Sta. 156+31.50 ℄ I.R. 70
℄ Existing Penn. B&O.RR. Sta. 156+90.35 ℄ I.R. 70
Begin Ramp "B" Sta. 00+00.00 ≈ Sta. 157+81.30 ℄ I.R. 70
Existing Pole #153870
Penn. B.& O. R.R.
B.M. #156 60 d Spike in Pole #175589 400' Lt. Sta. 156+00 Elev 1037.50
P.V.I. Sta. 159+00 Elev. 1078.35
-3.00%
+1.75%
+0.24%
Profile Grade Line Proposed I.R. 70
Proposed 6" Underdrains (Class I-3 Pipe) 4.35' Below Profile
Sta. 160+00
2-D,3-D Elev. 1060.50
1-D Elev. 1060.35
4-D Elev. 1060.31
Sta. 157+61
2-D Elev. 1066.24
L.V.C.=2150'
Sta. 155+20
1-D Elev. 1061.37
Sta. 155+08.47
1-D Elev. 1061.34
2-D Elev. 1062.12
3-D Elev. 1061.96
4-D Elev. 1062.64
Sta. 155+33
2-D Elev. 1062.17
Sta. 155+56
3-D Elev. 1062.10
Sta. 155+71
4-D Elev. 1062.79
Sta. 150+00
1-D Elev. 1057.26
2-D Elev. 1058.04
3-D Elev. 1057.88
4-D Elev. 1058.56
Proposed 6" Underdrain (Class I-3 Pipe) Typical Shallow Underdrain in Superelevated Section
℄ Proposed Relocated Upper Lewisburg-Salem Road Sta. 156+31.50 ℄ I.R. 70
℄ of Existing Penn-B & O.RR Sta. 156+90.36 ℄ I.R. 70
Critical Clearance 23'2¼"
Prop. Median Outlet Sta 158+09 See Sht. No. 49
Prop. Median Outlet Sta 155+11 See Sht. No. 47
Prop. Culvert See Sht. Nº 161
Prop. Field Tile Outlet Sta. 158+56 See Sht. Nº 49
Existing Ground

PROPOSED STRUCTURE
BRIDGE MOT-40-0296
Type: 4-span continuous steel beams with reinforced concrete deck & reinforced concrete substructure.
Spans: 44'-0", 55'-0", 55'-0" & 44'-0"
c to c bearings
Roadway: Two @ 42'-0" f/f concrete parapets 1-2 Safety Curbs
Load Frequency: C.F. 2000 (37) (Adequate for AASHO alternate loading)
Skew: 17°-36' Rt. Fwd
Wearing Surface: 1" Monolithic Concrete
Approach Slabs: A.S.-1-54 (25' Long)
Alignment: Tangent.

Excavation 2,292 C.Y.
Embankment 173,565 C.Y.
Embankment +2½%=194,393 C.Y.

Sta.	Exist. Elev.	Proposed Elev.
150	1041.17	1062.26
150+50	1047.4	1062.60
151	1046.9	1062.92
151+50	1045.9	1063.22
152	1044.5	1063.52
152+50	1042.9	1063.79
153	1042.8	1064.06
153+50	1043.9	1064.31
154	1041.1	1064.55
154+50	1038.8	1064.77
155	1036.9	1064.98
155+50	1036.0	1065.18
156	1035.6	1065.36
156+30	1036.7	1065.53
156+50	1036.7	1065.68
156+75	1033.5	1065.82
156+85	1033.5	1065.95
156+94	1037.3	1066.06
157	1038.4	1066.16
157+00	1038.1	1066.25
157+03	1037.1	1066.32
157+08	1036.5	1066.38
157+12	1037.4	1066.42
157+22	1034.2	1066.45
157+45.5	1034.5	1066.47
157+57	1032.8	1066.47
158	1031.6	1066.46
158+43	1031.6	1066.43
159	1031.4	1066.39
159+30.9		1066.34
159+50		1066.27
159+61		1066.19
159+88		1066.10
160	1030.9	1065.99
160+50	1030.6	1065.87
161		1065.73
161+50		1065.58
162		1065.42
162+50		1065.24
163		1065.05
163+50	1030.4	1064.85

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 Class E-1 Class F-1	I-1 Pipe Class I-3 Underdrains 6"	I-2 Masonry Headwalls	I-5 Pipe Specials	I-8 Catch Basins	I-15 Guard Rail Steel Beam Type	I-10 Dumped Rock	L-120 Jute Matting	E-3 Channel Exc.	E-12 Pipe Removal 15" Under	Drawing Reference Sheet No.
			15"	Shallow Deep	6"	F-1	Std.#4	Barrier Standard					
			L.F.	L.F. L.F.	C.Y.	EA.	EA.	L.F.	C.Y.	S.Y.	C.Y.	L.F.	
1-D	150+00 - 160+00	L		772									
2-D	150+00 - 160+00	L		774									
3-D	150+00 - 160+00	R		767			1		0.7	133	3.0		47
4-D	150+00 - 160+00	R		769			1		1.5	133			49
5-D	155+11	R	86		2			*150					
6-D	158+09	R	88		2			150	0.2				49
7-D	153+60 - 155+00	L&R						150					
8-D	158+07 - 159+59	L&R						*87.5				272	
9-D	158+56	L	10					512.5					
1-G	152+55 - 154+00	L&R						575					
2-G	154+00 - 155+55	R						250					
3-G	157+63 - 159+12	L						200					
4-G	159+12 - 160+00	L&R											
5-G	150+00 - 155+14	L											
6-G	150+00 - 155+68	R											
7-G	157+50 - 160+00	L											
8-G	157+98 - 160+00	R											
1-R	157+65 - 160+00	R											
			114	10 3082	40	4	2	*237.5	1837.5	2.4	266	3.0	272

*100% State Participation

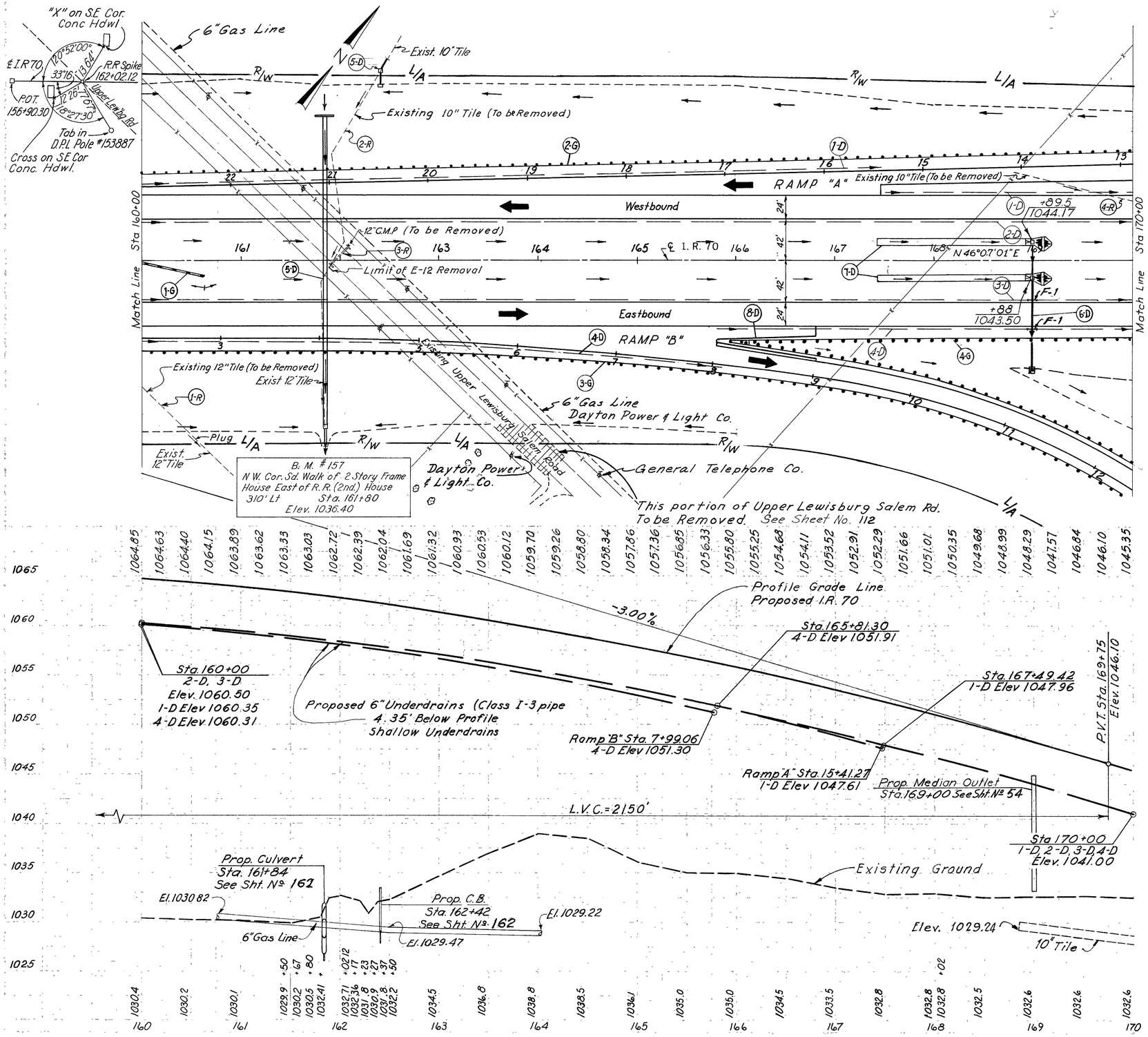
STA. 150+00 TO STA. 160+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees and stumps to be removed

12" - 18"	7
18" - 24"	2
24" - 30"	1
30" - 36"	3
36" - 42"	1
42" - 48"	1



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-5 Pipe Special: F-1 30" Beyd	I-5 Pipe Special: I-3 60" Beyd	I-12 Concrete Curb & Gutter Combined Type B	I-8 Catch Basins: Std #22.80	I-8 Catch Basins: Std #24	I-8 Catch Basins: Mod. Std #24	I-8 Catch Basins: Std #8	I-15 Guard Rail Steel Beam Deep Standard Barrier	E-3 Channel Exc.	L-10 Sodding	L-120 Jute Matting	I-10 Dumped Rock	E-12 Pipe Removal Under 15"	E-12 Pipe Removal 15" to 30"	E-12 Pipe Removal 12"	Drawing Reference Sheet No.
			EA.	EA.	L.F.	EA.	EA.	EA.	EA.	L.F.	C.Y.	S.Y.	S.Y.	C.Y.	L.F.	L.F.	L.F.	
1-D	160+00 - 170+00	L						1	2			4.2	0.3	1.2				162 54
2-D	160+00 - 170+00	L		1														
3-D	160+00 - 170+00	R		1														
4-D	160+00 - 170+00	R																
5-D	161+84	L&R	2			1	1		2		25		267					
6-D	169+00	L&R																
7-D	167+43 - 168+93	L&R			206													
8-D	165+81 - 166+81	R																
1-G	160+00 - 160+63	R								*62.5								
2-G	160+00 - 167+47	L								750								
3-G	160+00 - 165+82	R								600								
4-G	165+96 - 170+00	R								404								
1-R	160+00 - 160+46	R													66			
2-R	161+90 - 162+40	L&R														210	26	
3-R	161+90 - 162+10	L&R															124	
4-R	168+80 - 170+00	L																
			2	2	206	1	1	1	2	1754	25	4.2	267	0.3	1.2	334	92	

ESTIMATED QUANTITIES	I-1 Pipe: Class A-1 M.66 (60) Beveled	M.66.8 (60) Beveled	M.66 440 Beveled	Class E-1	Class F-1 6"	12"	15"	I-1 Class I-2 Shallow	I-2.1 Mod. Portl. 4"	I-2 Masonry Headwalls Type 'C'	Type 'E'	Type 'I'
	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	S.Y.	C.Y.		
1-D					10			1000				
2-D								1008				
3-D					20			998				
4-D					10			990				
5-D			302				60			11	.26	
6-D				38			22				.26	2
7-D		64							14			
8-D												
1-G												
2-G												
3-G												
4-G												
1-R												
2-R												
3-R												
4-R												
	64		302	38	40		82	3996	14	11	.52	2

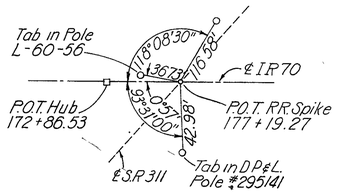
Excavation	2,224 C.Y.
Embankment	193,699 C.Y.
Embankment +12%	216,943 C.Y.

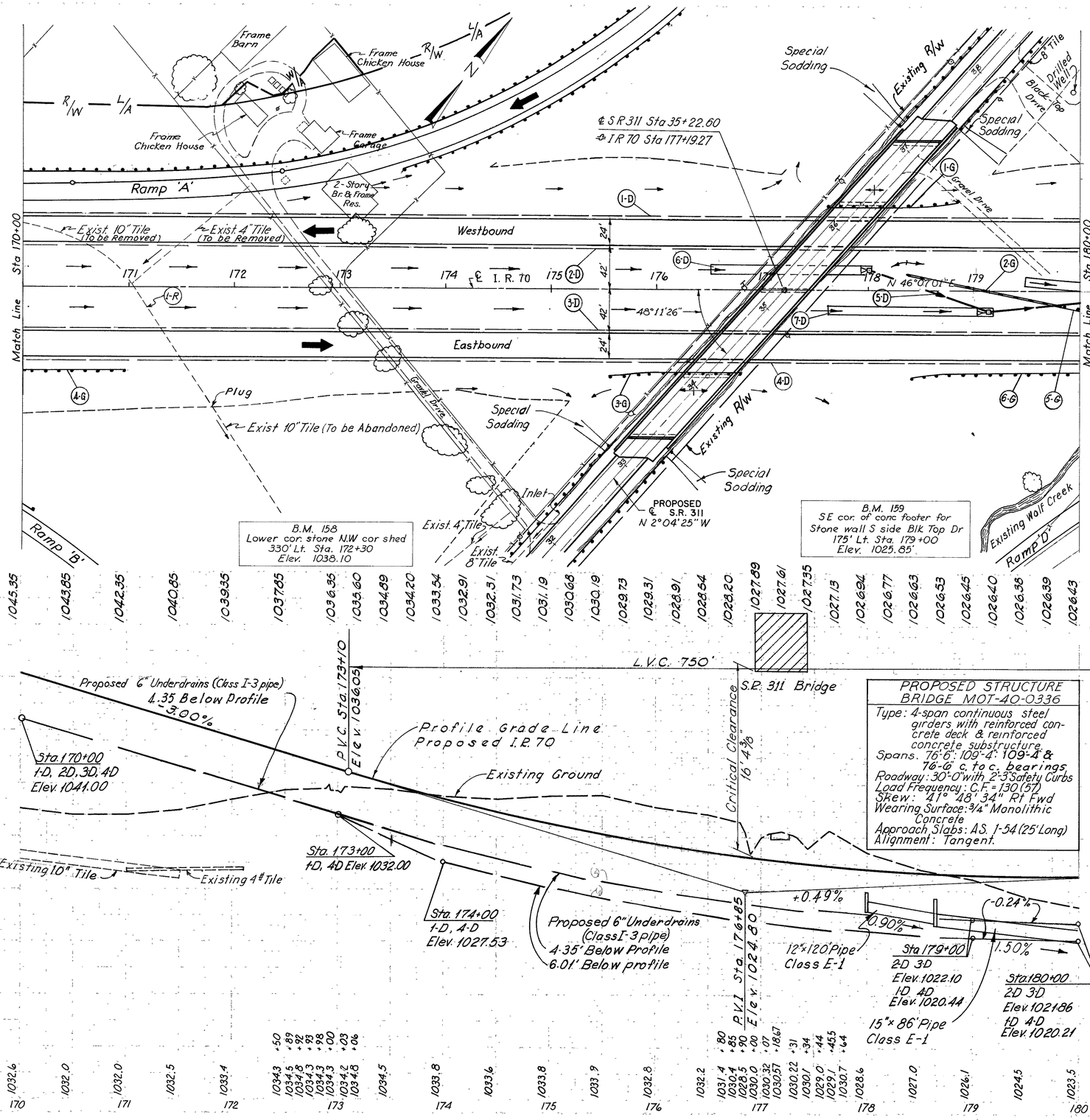
* 100 % State Participation

STA. 160+00 TO STA. 170+00

I-70 - 1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73





PROPOSED STRUCTURE BRIDGE MOT-40-0336

Type: 4-span continuous steel girders with reinforced concrete deck & reinforced concrete substructure.
Spans. 76'-6", 109'-4" & 76'-6" c. to c. bearings.
Roadway: 30'-0" with 2'-3" Safety Curbs
Load Frequency: C.F. = 130 (57)
Skew: 41° 48' 34" Rt Fwd
Wearing Surface: 3/4" Monolithic Concrete
Approach Slabs: A.S. 1-54 (25' Long)
Alignment: Tangent.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class E-1 12" L.F.	I-1 Pipe Class E-1 15" L.F.	I-1 Pipe Class I-3 Underdrains 6" Shallow L.F.	I-1 Pipe Class I-3 Underdrains 6" Deep L.F.	I-8 Catch Basins Std.#6 EA.	I-15 Guard Rail Steel Beam Type Standard Barrier L.F.	E-12 Pipe Removal Under 15" 10" L.F.	L-120 Jute Matting S.Y.
1-D	170+00 - 180+00	L			350	650				
2-D	170+00 - 180+00	L			1000					
3-D	170+00 - 180+00	R			1000					
4-D	170+00 - 180+00	R			350	650				
5-D	178+00 - 179+00	L&R	120	86			2			
6-D	176+43 - 177+93	L						125		133
7-D	178+58 - 179+08	R						*150		133
1-G	177+60 - 178+85	L						125		
2-G	178+35 - 179+83	L&R						*150		
3-G	175+54 - 176+79	R						125		
4-G	170+00 - 170+96	R						96		
5-G	179+83 - 180+00	R						17		
6-G	178+40 - 180+00	R						*150 10		
1-R	170+00 - 171+79	L&R							260	
			120	86	2,700	1,300	2	* 150 * 175	260	266

Excavation	15358 C.Y.
Embankment	17384 C.Y.
Embankment+12%	19470 C.Y.

* 100% State Participation

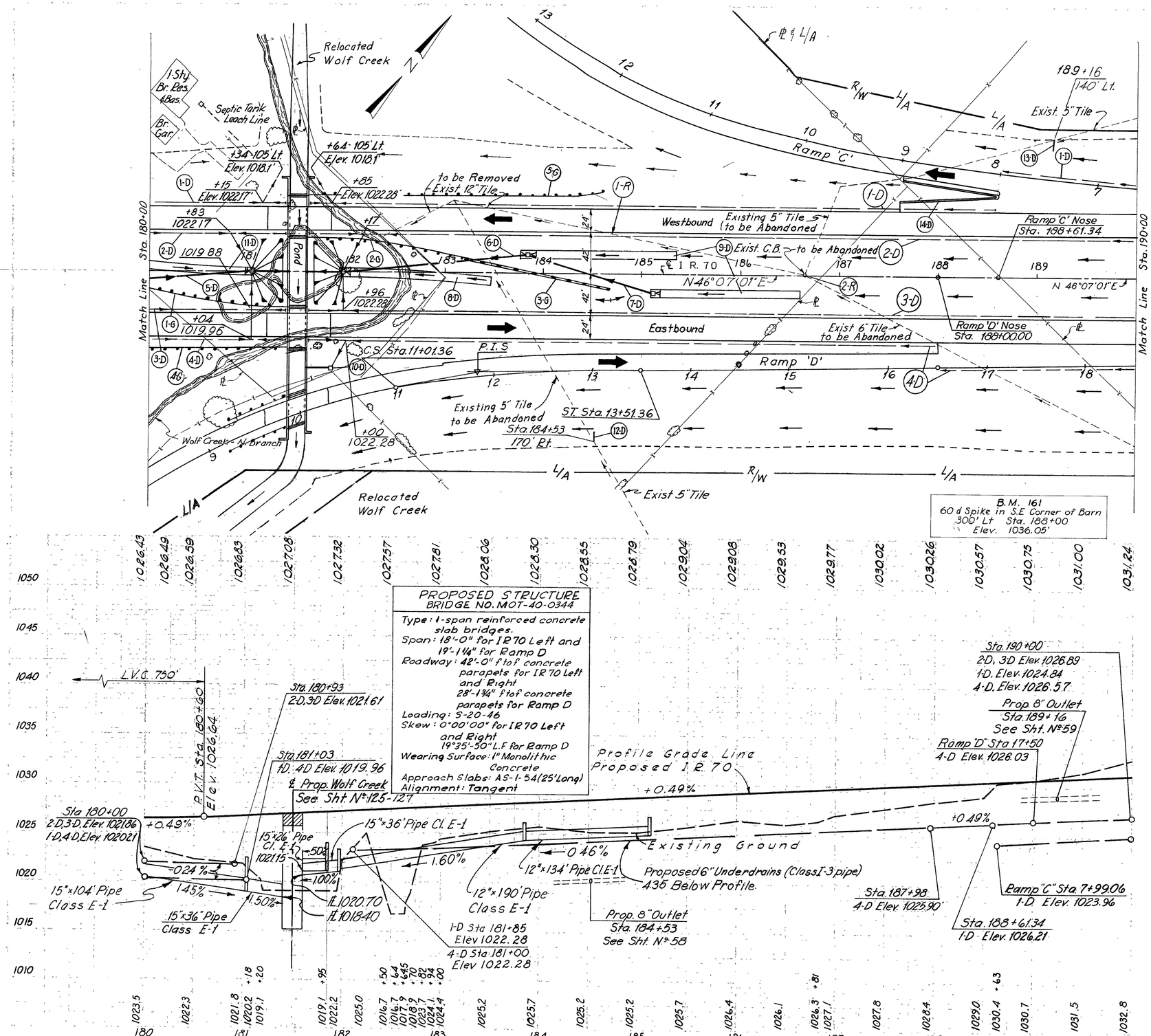
STA. 170+00 TO STA. 180+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees and stumps to be removed

12"-18"	6
18"-24"	2
36"-42"	1



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class M-6.6(b) 6" L.F.	I-1 Pipe Class E-1 12" L.F.	I-1 Pipe Class E-1 15" L.F.	I-1 Pipe Class F-1 6" L.F.	I-1 Pipe Class F-1 8" L.F.	I-5 Class I-3 Underdrains 6" Shallow L.F.	I-5 Class I-3 Underdrains 6" Deep L.F.	I-5 Pipe Specials A-1 6"x6"x6" Cross Ea.	I-5 Pipe Specials I-3 6"x6"x6" Tee Ea.	I-5 Pipe Specials I-3 6"x6"x6" Wye Ea.	I-8 Catch Basins Std.#4 Ea.	I-8 Catch Basins Std.#5 Ea.	I-8 Catch Basins Std.#8 Ea.	I-12 Concrete Curb Standard Type 6 L.F.	L-120 Jute Matting S.Y.	I-15 Guard Rail Steel Beam Type Std. Barrier L.F.	E-12 Pipe Removed 15" & Under 12" L.F.	I-16 C.B. to be Aban.	E-12 I-16 Pipe Removed 15" & Under 12" L.F.	I-16 C.B. to be Abandoned L.F.	Drawing Reference Sheet No.
1-D	180+00 - 190+00	L					20	730	310			2											58
2-D	180+00 - 190+00	L				20		1036															58
3-D	180+00 - 190+00	R				20		1005				2											58
4-D	180+00 - 190+00	R	66			10		858	138		1	1		1									58-58
5-D	180+00 - 181+41	R		140											1								
6-D	181+59 - 183+84	L		190	36									1									
7-D	183+84 - 185+12	L4R		134																			
8-D	182+04 - 183+54	L4R													2								
9-D	183+91 - 186+69	L4R																					
10-D	181+59 - 181+85	R			26										1								
11-D	179+48 - 18 +98	L4R																					
12-D	184+48	R					10																
13-D	189+14	L					10																
14-D	187+61 - 188+61	L														103							59
1-G	180+00 - 181+33	R																133					
2-G	181+60 - 183+10	L																150					
3-G	183+10 - 184+58	R																	* 150				
4-G	180+00 - 181+40	R																	140				
5-G	181+60 - 184+60	L																	* 150				
1-R	182+50 - 186+78	L																	150				
2-R	186+78	L																		532	1	532	1
			66	464	62	60	40	3629	448	1	5	2	1	1	2	103	533	*150	*150	532	1	532	1

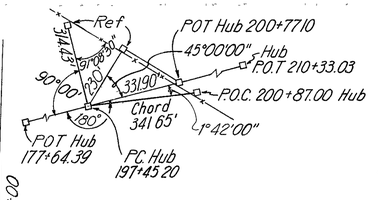
* 100% State Participation

Excavation	6210 C.Y.
Embankment	13867 C.Y.
Embankment +12%	15531 C.Y.

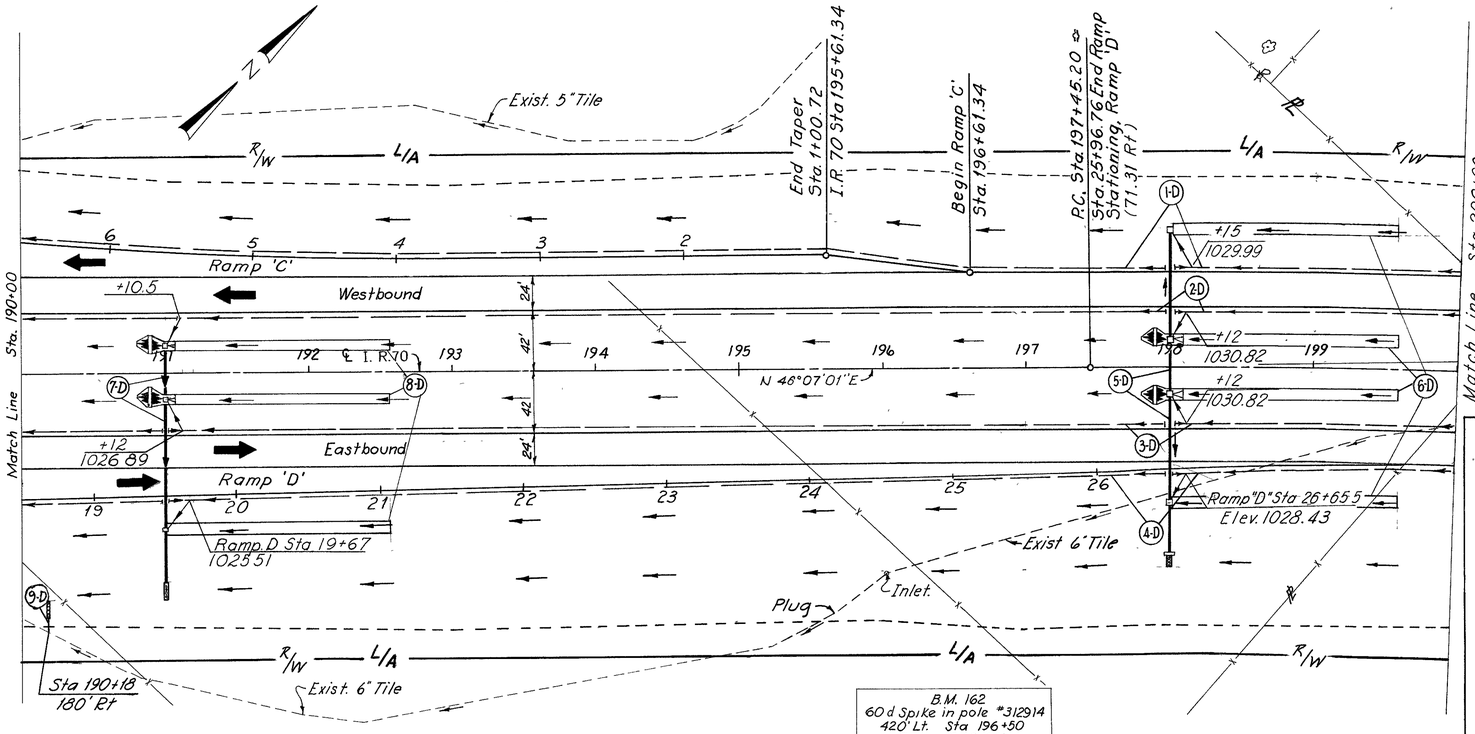
I-70-1(15)20

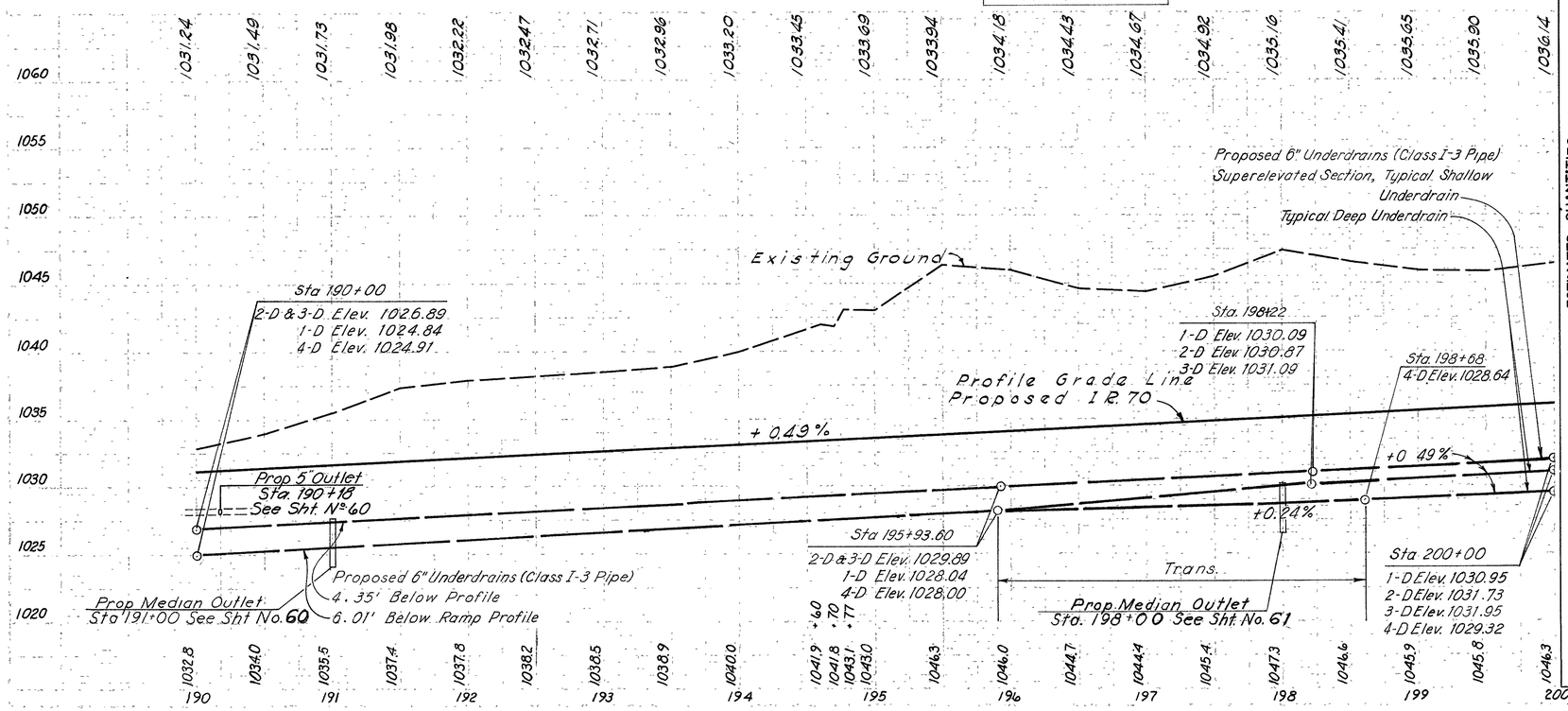
MONTGOMERY COUNTY
MOT. 40-2.73

CURVE DATA I.R 70
P.I Sta. 224+29.13
Δ 50° 12' RT
D 1° 00'
T 2683.93
L 5020 00
R 5729.58
E 597.47
S 0 032'/ft



Trees and stumps to be removed
12"-18" 1





ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe: Class A-1 M-6.6(a) M-6.8(b) 15" LF	21" LF	24" LF	Class E-1 12" LF	18" LF	21" LF	24" LF	Class F-1 6" LF	8"	Class I-3 Underdrains 6" Shallow LF	Deep LF	I-2 Masonry Headwalls Type 'E' C.Y.	I-5 Pipe Specials I-3 6"x60" Wye EA.	6"x60" Wye EA.	I-8 Catch Basins Std #5 EA.	Std #8 EA.	L-120 Jute Matting SY.	I-10 Dumped Rock 18" C.Y.	Drawing Reference Sheet No.
																					61
																					60
																					60
1-D	190+00 - 200+00	L								10			1017		1	1					
2-D	190+00 - 200+00	L								20		1016				2					
3-D	190+00 - 200+00	R								20		1016				2					
4-D	190+00 - 200+00	R								20			1020			2					
5-D	198+00	L&R	76		76			38	38					.41			2			1.8	
6-D	198+07 - 199+57	L&R																2	533		
7-D	191+00	L&R	32					38	34					.30			1	2	400	1.8	
8-D	191+07 - 192+59	L&R																		1.3	
9-D	190+18									10		1032	2037	.71	6	1	3	4	933	4.9	
			76		76			38	38	70	10	2032	2037	.71	6	1	3	4	933	4.9	
			108																		

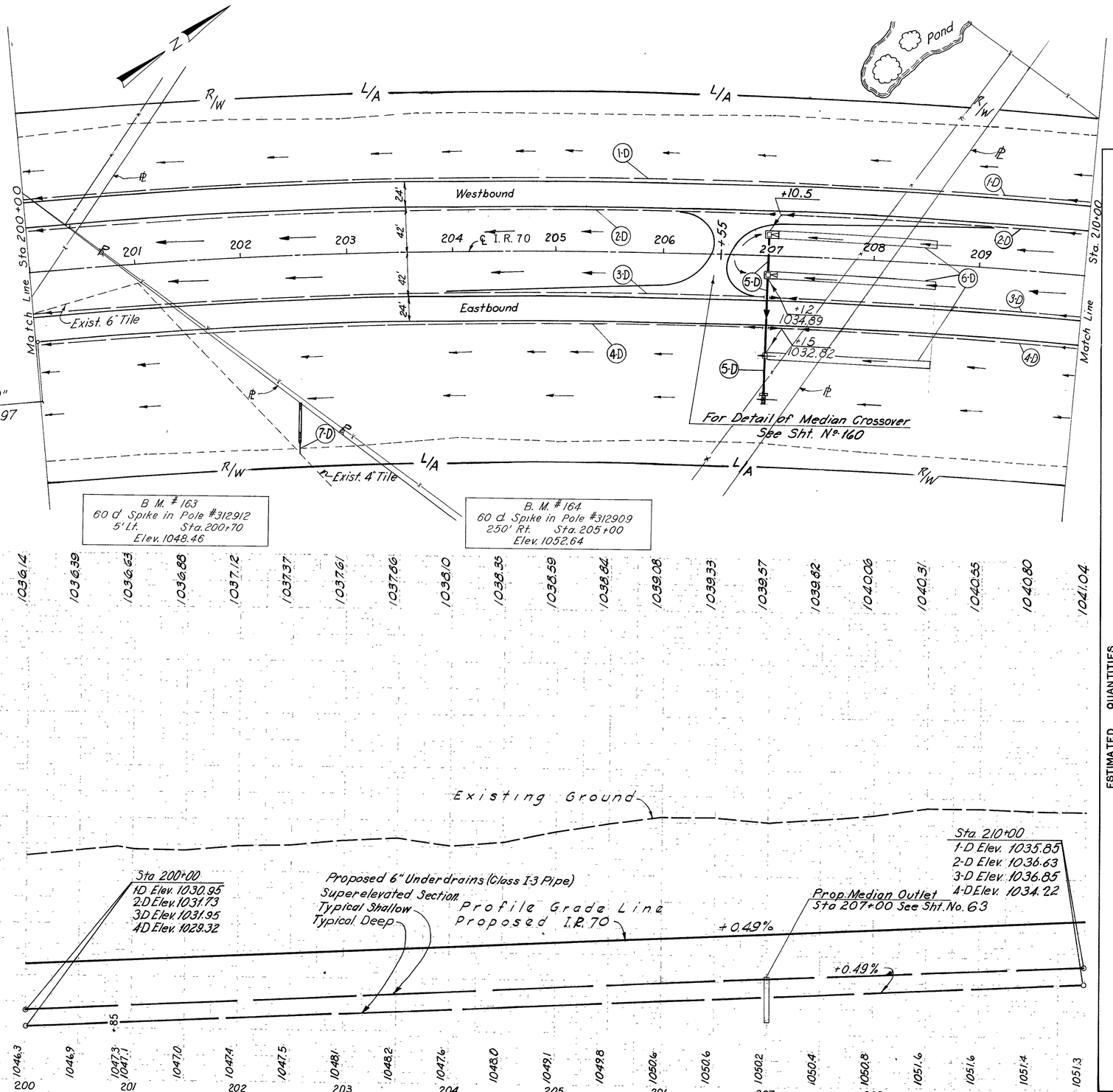
Excavation	97,900 C.Y.
Embankment	4 C.Y.
Embankment+12%	4 C.Y.

STA. 190+00 TO STA. 200+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

CURVE DATA I.R 70
P.I. Sta 224+29.13
Δ 50° 12' RT
D 1° 00'
T 2683.93
L 5020.00
R 5729.58
E 597.47
S 0.032'/ft



Trees and stumps to be removed
12" - 18" 3

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	1:1 Pipe Class A-1 M-60.1(a) M-60.1(b) 12" L.F.	1:1 Pipe Class E-1 18" L.F.	1:1 Pipe Class E-1 12" L.F.	1:1 Pipe Class F-1 6" L.F.	Class I-3 Underdrains 6" Shallow L.F.	Class I-3 Underdrains 6" Deep L.F.	Masonry Headwall Type "E" C.Y.	Pipe Specials Class I-3 16"x60° Wye EA	Pipe Specials Class I-3 16"x60° Bend EA	Pipe Specials Class I-3 F.E. 8" 45° Bend EA	Catch Basin Std. #8 EA	Catch Basin Std. #5 EA
1-D	200+00 - 210+00	L						1012						
2-D	200+00 - 210+00	L					1015				1			
3-D	200+00 - 210+00	R					1001			1				
4-D	200+00 - 210+00	R						1002		1				
5-D	207+00	L&R	76	38	38	30			0.30				2	1
6-D	207+07 - 208+57	L&R										1		
7-D	202+50	R				10								
			76	38	38	30	2016	2014	0.30	2	1	1	2	1

	Drawing Reference	Sheet No.		
		G2		
L-120	Jute Matting	S.Y.	400	400
I-10	Dumped Rock	18" C.Y.	1.3	5.5
		4.2		
I-8	Catch Basin	Std. #5 EA	1	1
		Std. #8 EA.	2	2
I-5	Pipe Specials Class I-3	F.E. 8" 45° Bend EA.	1	1
		16"x60° Bend EA.	1	1
		16"x60° Wye EA	2	2
I-2	Masonry Headwall	Type "E" C.Y.	0.30	0.30
	Class I-3 Underdrains 6"	L.F. Deep	2014	2014
		L.F. Shallow	2016	2016
	Class F-1	6" L.F.	30	30
	Class E-1	12" L.F.	38	38
		18" L.F.	38	38
	Class A-1 M-60.1(a) M-60.1(b)	12" L.F.	76	76

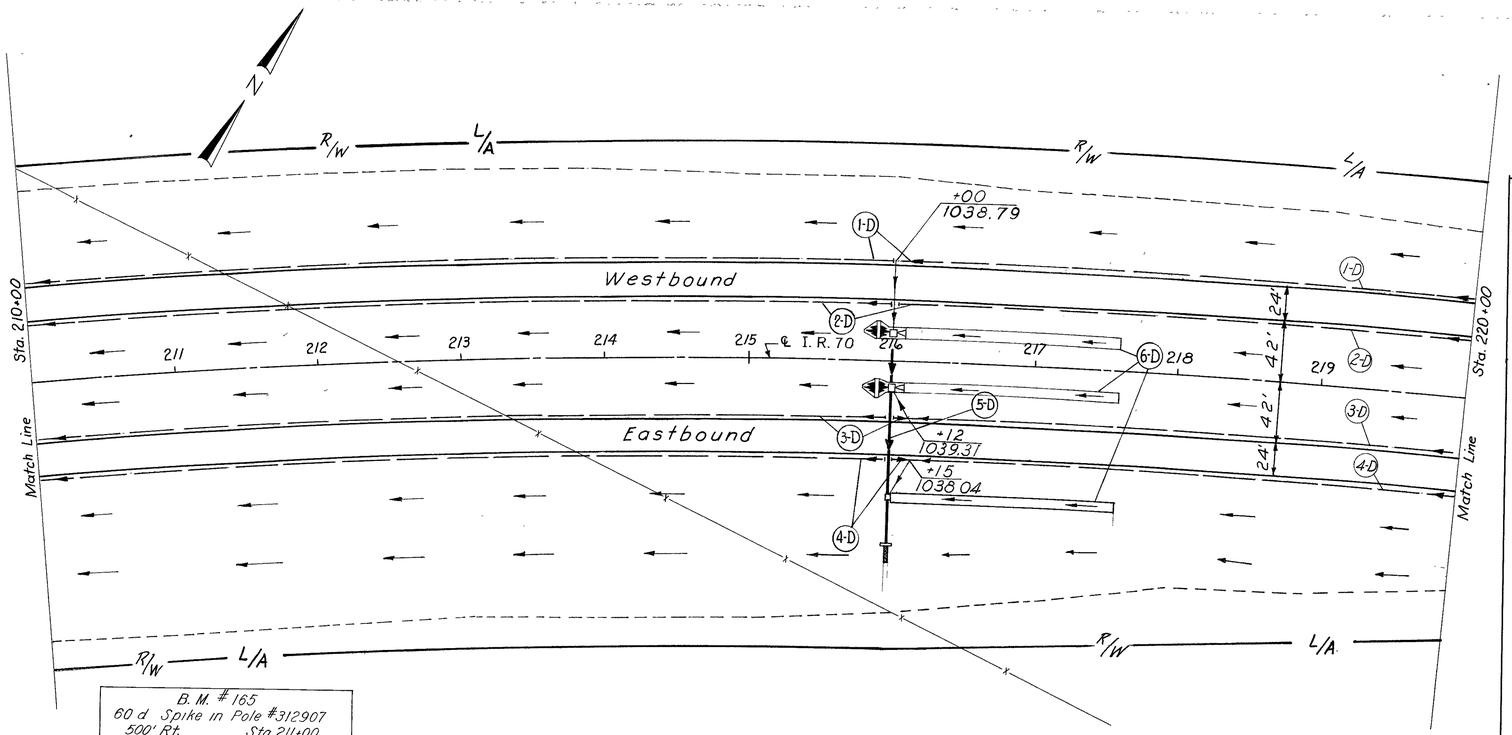
Excavation	129,950 C.Y.
Embankment	0
Embankment +12%	0

I-70-1(15)20

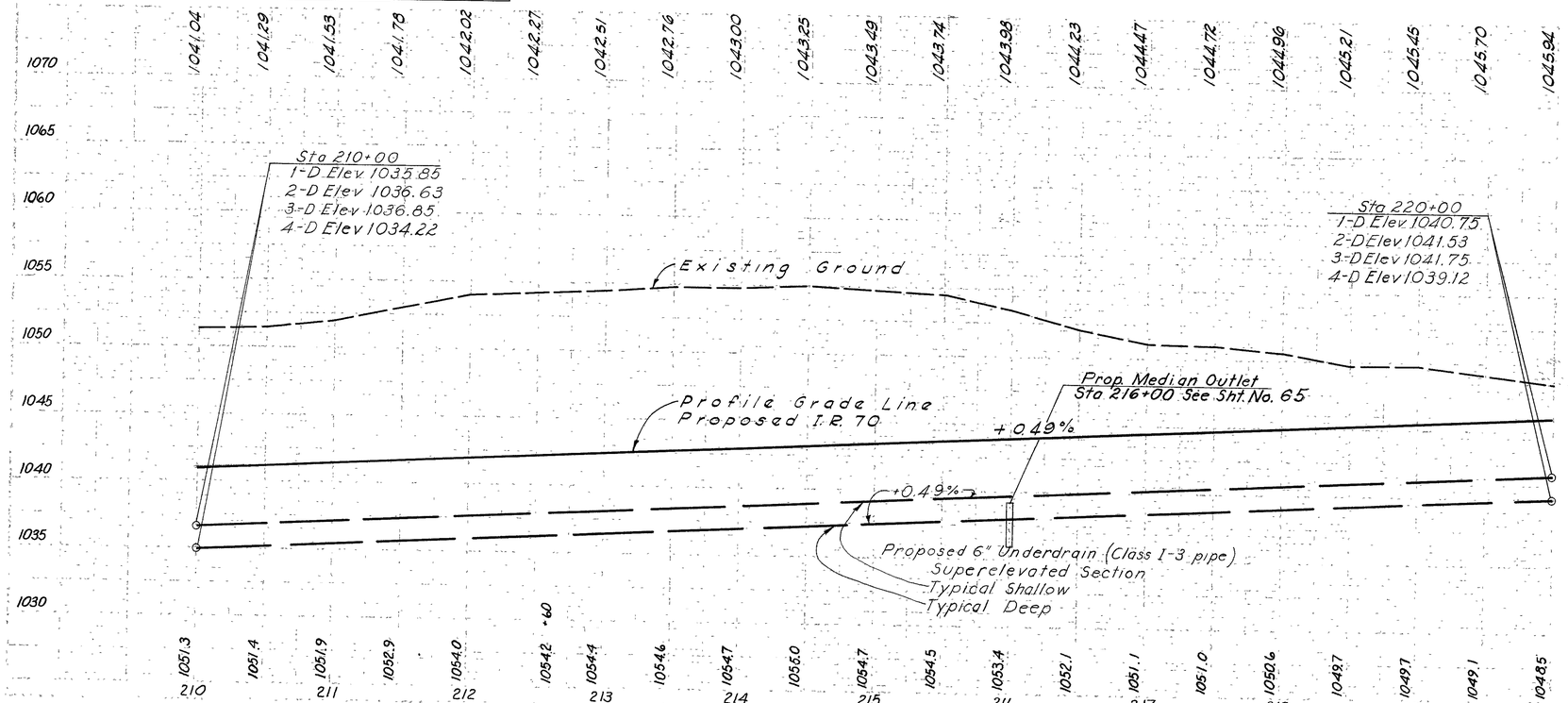
MONTGOMERY COUNTY
MOT. 40-2.73

CURVE DATA I.R 70

P.I Sta 224+29.13
Δ 30° 12' RT
D 1° 00'
T 2683.93
L 5020.00
R 5729.58
E 397.47
S 0.0321 ft



B.M. # 165
60 d. Spike in Pole #312907
500' Rt.
Sta. 211+00
Elev. 1054.23



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	H Pipe I-5 Class A-1 M-66(b) M-68(b) 6" L.F.	H Pipe I-5 Class A-1 M-66(b) M-68(b) 18" L.F.	H Pipe I-5 Class E-1 18" L.F.	H Pipe I-5 Class E-1 12" L.F.	Class F-1 6" L.F.	Class I-3 6" Underdrains Shallow L.F.	Class I-3 6" Underdrains Deep L.F.	Masonry Headwalls Type E C.Y.	Pipe Specials I-2 Class A-1 6"x90° Bend EA.	Pipe Specials I-2 Class A-1 6"x6"x6" Tee EA.	Pipe Specials I-3 Class I-3 6"x6"x6" Wye EA.	L-120 Jute Matting S.Y.	I-8 Catch Basins Std.#5 EA.	I-8 Catch Basins Std.#8 EA.	I-10 Dumped Rock 18" C.Y.
1-D	210+00 - 220+00	L						1003	1008								
2-D	210+00 - 220+00	L					10	1001									
3-D	210+00 - 220+00	R					10		1002						1	1	2
4-D	210+00 - 220+00	R					10								1	1	2
5-D	216+00	L&R	40	76	34	38	10			.30	1	1	1	400	1	1	2
6-D	216+07 - 217+57	L&R															
			40	76	34	38	30	2004	2010	.30	1	1	1	400	1	1	2

Drawing Reference Sheet No. 65

Excavation	109,000 C.Y.
Embankment	0
Embankment +12%	0

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-273

CURVE DATA I.R. 70

P.I. Sta. 224+29.13
Δ 50° 12' RT
D 1° 00'
T 2683.93
L 5020.00
R 5729.58
E 397.47
S 0 032'ft.

Ref. Point
P.O.T. Hub 219+94.01

P.I. Hub 224+29.13

Ref. Point
P.O.T. Hub
P.I. +46.074

P.O.T. Hub
210+33.03

Ref. Point

Hub near Fen Post
P.O.C. Hub 221+85

P.O.C. Hub 225+36.00

Chord

Tab in 6" Mulberry

Tab in Cor. Post

N

R/W

L/A

Westbound

Eastbound

Sta. 220+00

Sta. 230+00

Match Line

Match Line

1-D

2-D

3-D

4-D

24'

42'

42'

24'

221 222 223 224 225 226 227 228 229

℄ I.R. 70

Leach Bed

Septic Tank

Cistern

Fr. Sheds

Fr. Bldg.

2½ Sty. Brick & Frame Res.

Frame Outhouse

Drilled Well

Frame Barn

Fr. Chkn House

W/A

B. M. #166
R.R. Spike in Gate Post
345' Rt. Sta. 220+13
Elev. 1055.08

Trees and stumps to be removed
12"-18" 2

Leach beds cut by backslopes shall be removed, backfilled and properly dressed, shaped and seeded. Payment for this operation shall be included in the unit price bid for Item E-1 Roadway Excavation.

1045.94 1046.19 1046.43 1046.68 1046.92 1047.17 1047.41 1047.66 1047.90 1048.15 1048.26 1048.36 1048.46 1048.55 1048.63 1048.71 1048.77 1048.83 1048.88 1048.93 1048.91 1049.00 1049.02 1049.03 1049.04 1049.03 1049.02 1049.01 1048.98 1048.98 1048.91 1048.87

1070
1065
1060
1055
1050
1045
1040
1035
1030

Sta. 200+00
1-D Elev. 1040.75
2-D Elev. 1041.53
3-D Elev. 1041.75
4-D Elev. 1039.12

Existing Ground

P.V.C. Sta. 224+29.61
Elev. 1048.05

P.V.I. Sta. 227+29.61
Elev. 1049.52

Sta. 230+00
1-D Elev. 1045.34
2-D Elev. 1044.46
3-D Elev. 1044.68
4-D Elev. 1043.71

+0.49%
-0.24%
+0.24%
+0.49%
+0.24%
+0.49%
+0.486%

Profile Grade Line
Proposed I.R. 70

L.V.C. = 600'

Sta. 222+12
2-D Elev. 1042.57
3-D Elev. 1042.79

End Typical Deep Sta. 226+50
1-D Elev. 1043.64
4-D Elev. 1042.01

Proposed 6" Underdrain (Class I-3 Pipe)
Superelevation Section Typical Shallow
Typical Deep

Proposed 6" Underdrain (Class I-3 Pipe)
Elevations as indicated

1048.5 1048.4 1048.6 1049.0 +.50 1049.1 +.82 1049.8 +.83 1049.7 +.85 1050.3 +.00 1051.3 1054.5 1054.6 1053.2 1051.5 +.50 1051.2 +.63 1051.3 1051.4 +.39 1049.1 1048.5 1047.8 1046.8 1046.1 1046.7 1047.6 1047.6 1046.5

220 221 222 223 224 225 226 227 228 229 230

ESTIMATED QUANTITIES								
					I-1			
					Class I-3 Underdrains			
REF. NO.	STATION TO STATION	SIDE	Shallow L.F.	Deep L.F.				
1-D	220+00 - 230+00	L	180	832				
2-D	220+00 - 230+00	L	1007					
3-D	220+00 - 230+00	R	993					
4-D	220+00 - 230+00	R		988				
			2180	1820				

Excavation	24,980 C.Y.
Embankment	2948 C.Y.
Embankment +12%	3302 C.Y.

Drawing Reference Sheet No.

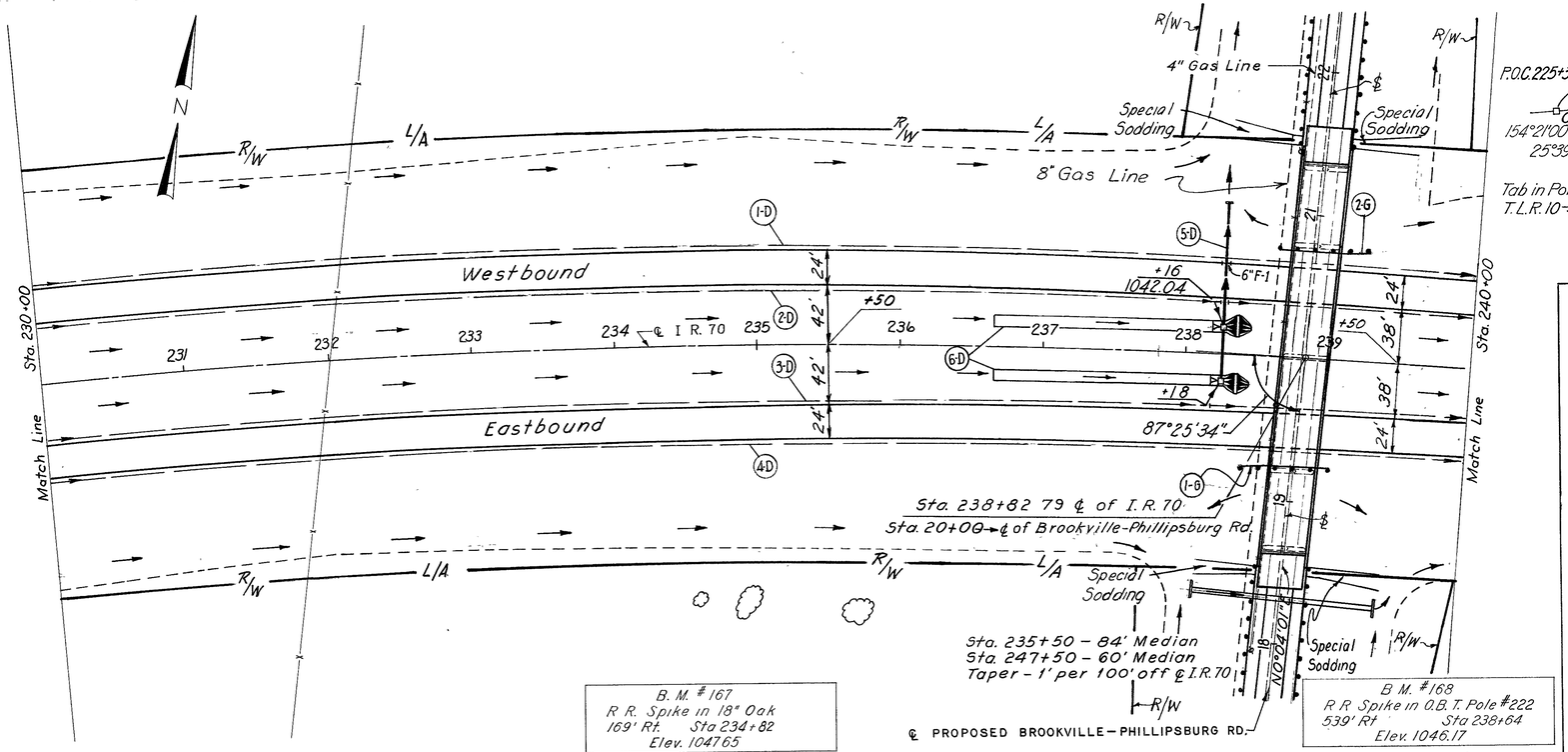
STA. 220+00 TO STA. 230+00

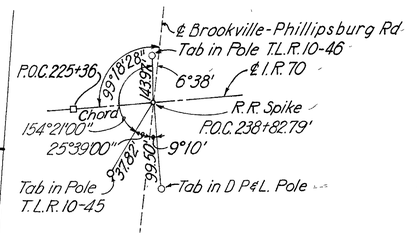
I-70-1(15)20

MONTGOMERY COUNTY
MOT.-40-2.73

CURVE DATA I.R.70

P.I. Sta 224+29.13
Δ 50° 12' 12" RT
D 1° 00'
T 2683.93
L 5020.00
R 5729.58
E 397.47
S 0.0321 ft.



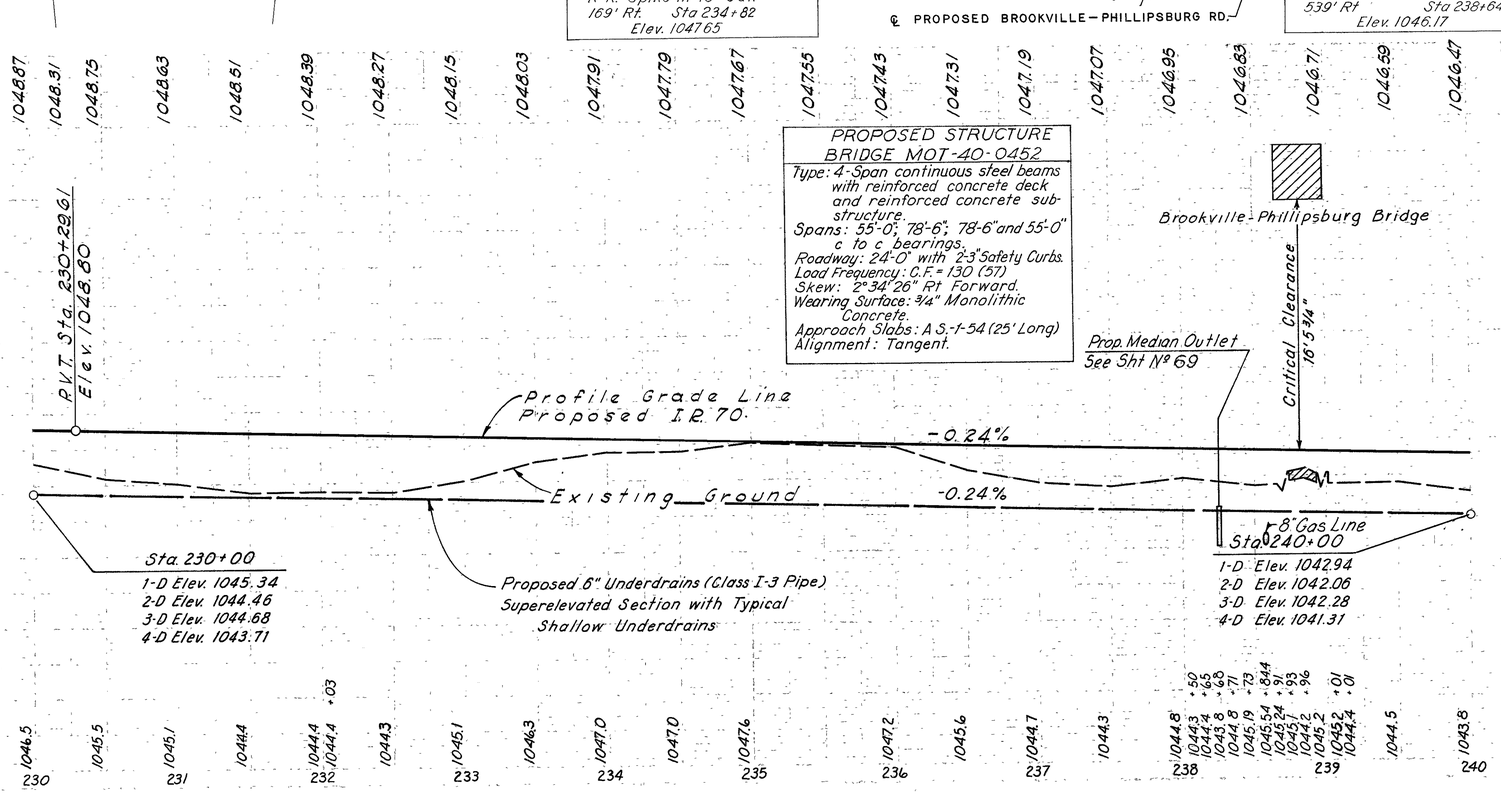


B. M. # 167
R. R. Spike in 18" Oak
169' Rt. Sta 234+82
Elev. 1047.65

B. M. # 168
R. R. Spike in O.B.T. Pole # 222
539' Rt Sta 238+64
Elev. 1046.17

PROPOSED STRUCTURE BRIDGE MOT-40-0452

Type: 4-Span continuous steel beams with reinforced concrete deck and reinforced concrete substructure.
Spans: 55'-0", 78'-6", 78'-6" and 55'-0" c to c bearings.
Roadway: 24'-0" with 2'-3" Safety Curbs.
Load Frequency: C.F. = 130 (57)
Skew: 2° 34' 26" Rt Forward.
Wearing Surface: ¾" Monolithic Concrete.
Approach Slabs: A S.-1-54 (25' Long)
Alignment: Tangent.



Drawing Reference	Sheet No.	
	69	
	4	4
	267	267

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 M-6.6(a) M-6.8(b) 15" L.F.	I-1 Pipe Class E-1 12" L.F.	I-1 Pipe Class F-1 6" L.F.	I-3 Class I-3 Underdrains 6" Shallow L.F.	I-3 Class I-3 Underdrains 6" Deep L.F.	I-2 Masonry Head-walls Type 'E' C.Y.	I-5 Pipe Specials 6"x60° Bend Ea.	I-5 Pipe Specials 6"x60° Wye Ea.	I-8 Catch Basins Std.#8 Standard Ea.	I-15 Guard Rail Steel Beam Deep L.F.
1-D	230+00 - 240+00	L			10	1002						
2-D	230+00 - 240+00	L			10	1017				1		
3-D	230+00 - 240+00	R			10	1003			1			
4-D	230+00 - 240+00	R				988						
5-D	238+25	L&R	88	36				.23			2	
6-D	236+68 - 238+18	L&R										112.5
1-G	237+90 - 239+02.5	R										112.5
2-G	238+60 - 239+72.5	L										
			88	36	30	4010		.23	1	1	2	225

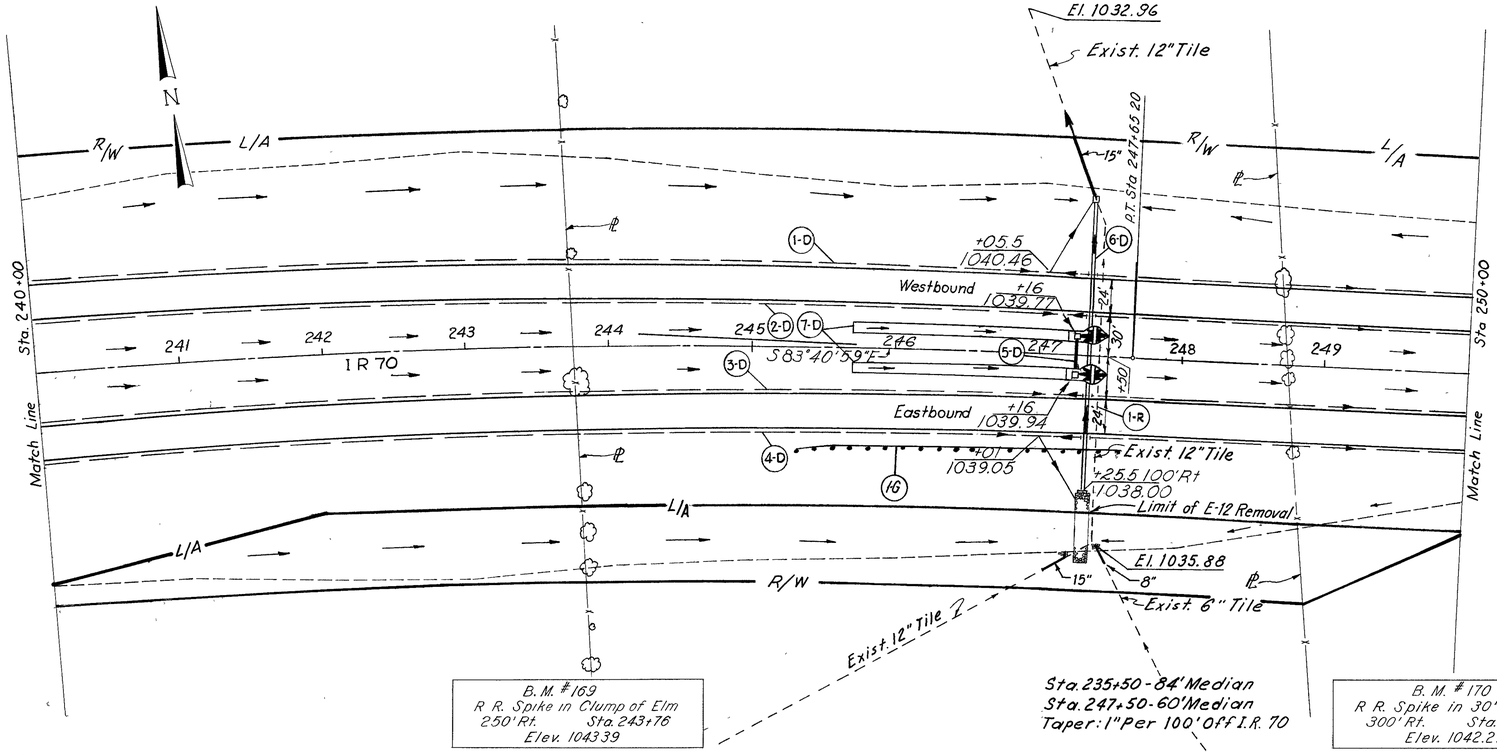
Excavation 7,404 C.Y.
Embankment 10,534 C.Y.
Embankment +12% 14,798 C.Y.

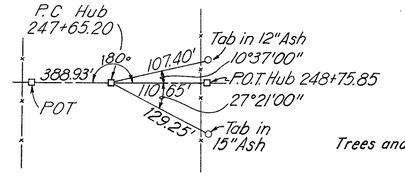
STA. 230+00 TO STA. 240+00

I-70 · 1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

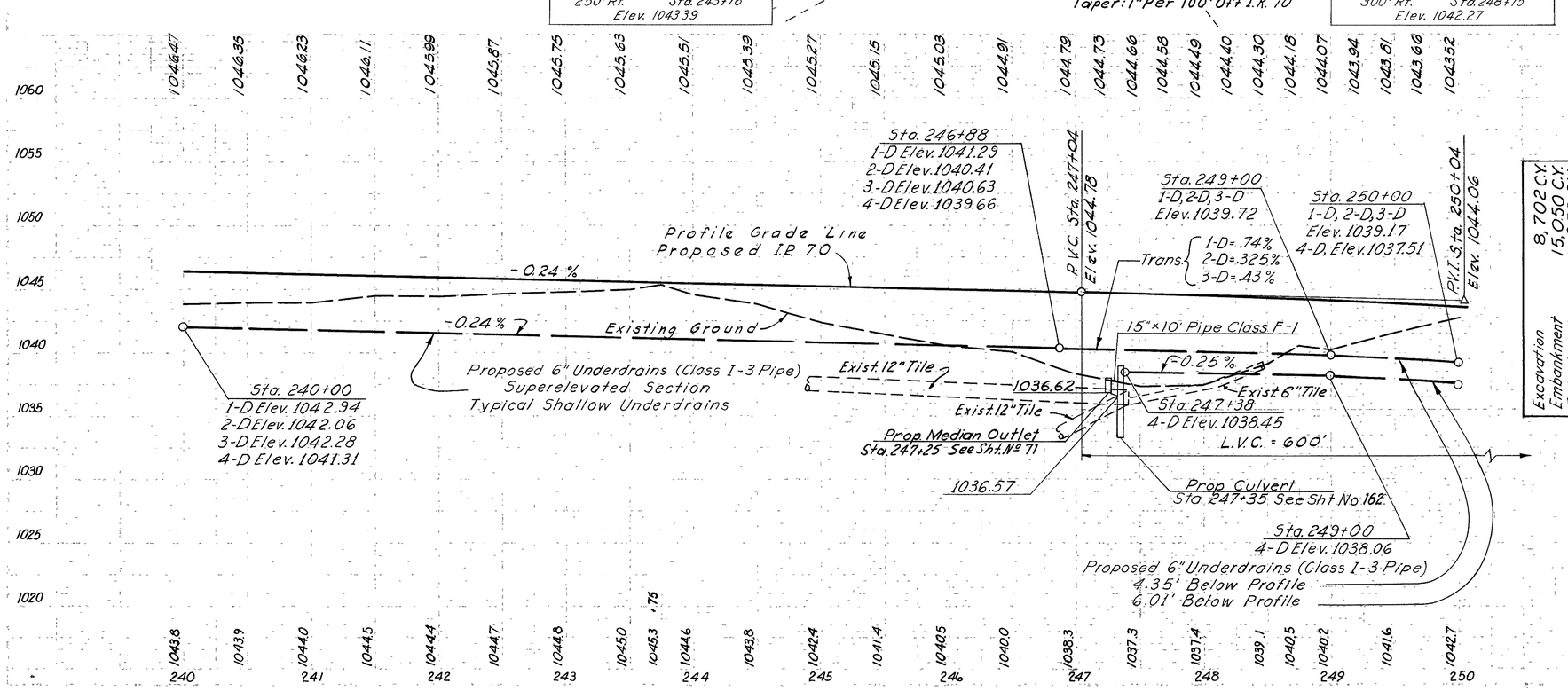
CURVE DATA I.R.70
P.I. Sta 224+29.13
Δ 50°12' RT.
D 1° 00'
T 2683.93
L 5020.00
R 5729.58
E 597.47
S 0.0321 ft.





Trees and stumps to be removed

12" - 18"	5



Excavation	8,702 C.Y.
Embankment	15,050 C.Y.
Embankment +12%	16,856 C.Y.

ESTIMATED QUANTITIES

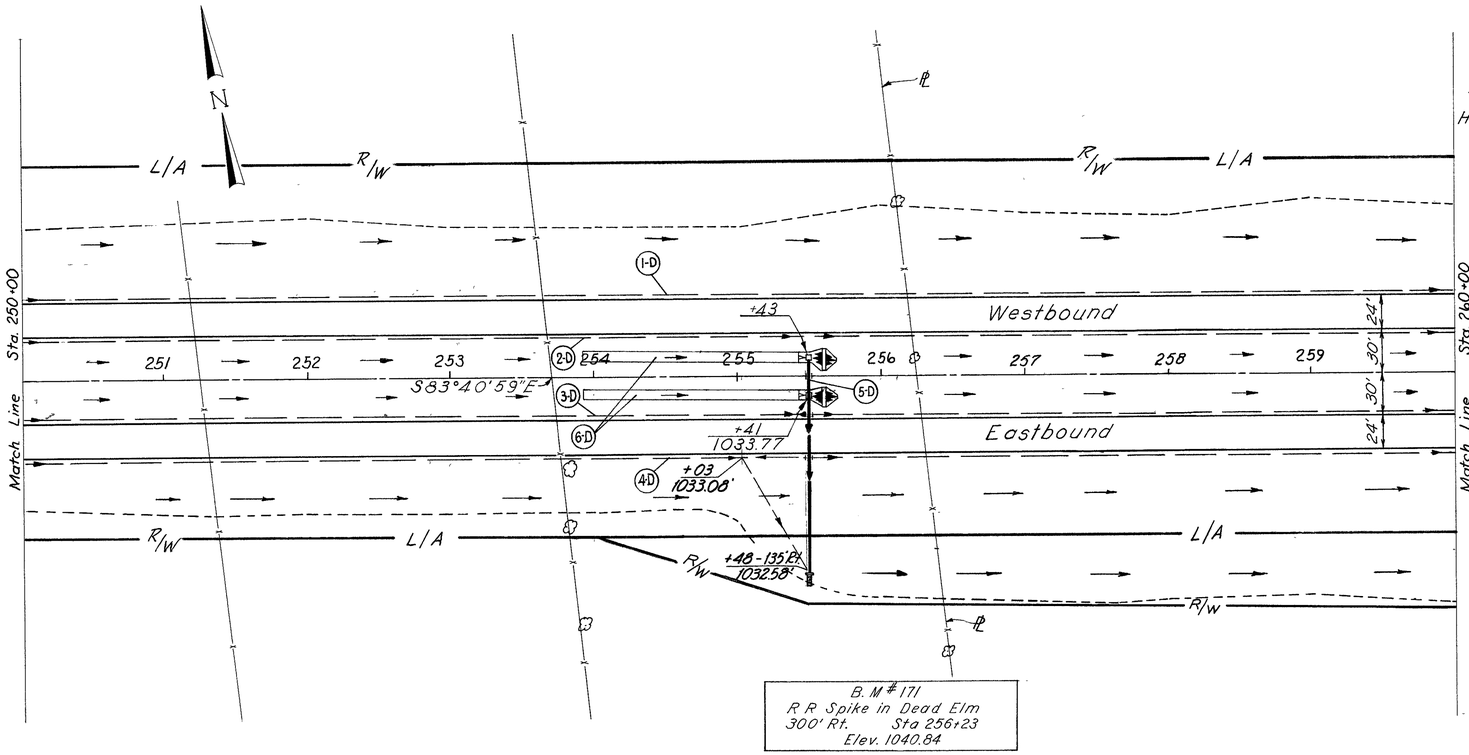
REF. NO.	STATION TO STATION	SIDE	I-1 Pipe: Class A-1 Wrapped 42" L.F.	Class E-1 12" L.F.	Class I-3 Underdrains 6" Shallow L.F.	Deep L.F.	I-5 Pipe Specials: Class F-1 6" L.F.	8" L.F.	15" L.F.	I-3 6"-60° Wye Ea.	A-1 42"x24"x15" Tee Ea.	F-1 15"-75° Bend Ea.
1-D	240+00 - 250+00	L			1048		10			1		
2-D	240+00 - 250+00	L			1006		10			1		
3-D	240+00 - 250+00	R			998		10			1		
4-D	240+00 - 250+00	R			770	262		10		1		
5-D	247+25	L&R		26	10							
6-D	247+35	L&R	194					10	64		1	1
7-D	245+68 - 247+18	R										
1-G	245+35 - 247+60	L&R										
1-R	247+40											
			194	26	3822	262	30	20	64	4	1	1

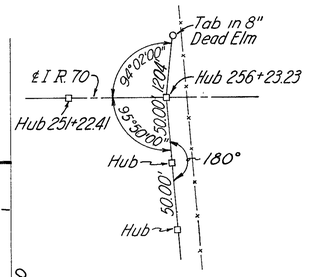
	I-8 Catch Basins Std.#8 Ea.	Std.#24 MOD. Ea.	I-2 Masonry Headwalls Type 'E' C.Y.	Type 'C' C.Y.	L-120 Jute Matting S.Y.	L-10 Sodding S.Y.	E-3 Channel Exc. C.Y.	I-10 Riprap 6" S.Y.	Dumped Rock 18" C.Y.	I-15 Guard Rail Steel Beam Std. L.F.	E-12 Pipe Removal 12" L.F.	Drawing Reference
	2		1	.26		267	4.2	28	52	0.5	225	220	71 163
	2		1	.26	11	267	4.2	28	52	0.5	225	220	

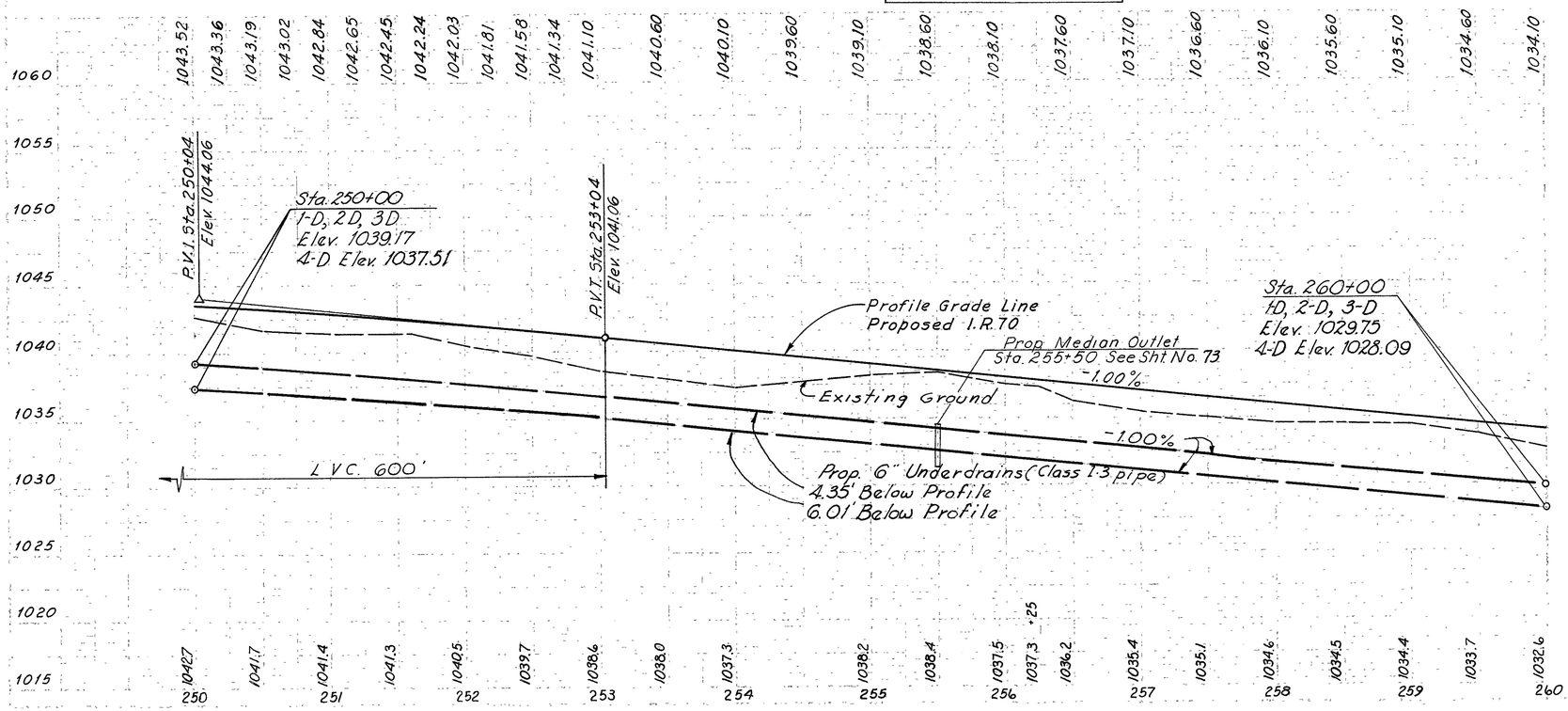
STA. 240+00 TO STA. 250+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT 40-273







ESTIMATED QUANTITIES

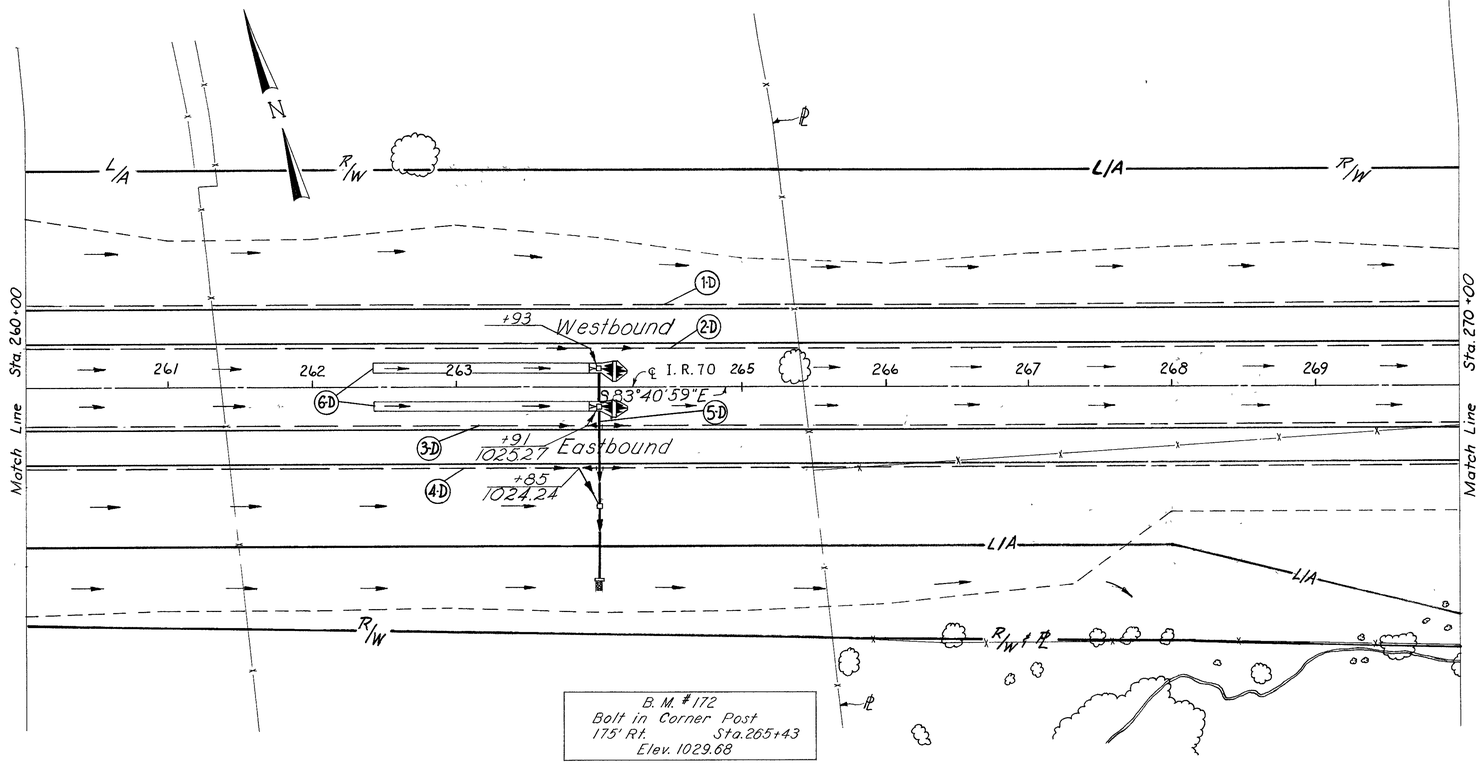
REF NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 (Alt. (a) or (b)) 15"	I-1 Pipe Class E-1 12"	I-1 Pipe Class F-1 8"	I-1 Pipe Class F-1 6"	Class I-3 Underdrains 6" Shallow	Class I-3 Underdrains 6" Deep	I-2 Masonry Head-walls Type "E"	I-5 Pipe Specials 6"-60° Wye	I-5 Pipe Specials 6"-60° Bend	I-8 Catch Basins Std #8	L-120 Jute Netting	L-120 I-10 Dumped Rock 18"
			L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	S.Y.	C.Y.
1-D	250+00 - 260+00	L					1000							
2-D	250+00 - 260+00	L				10	1002				1			
3-D	250+00 - 260+00	R				10	1002			1				
4-D	250+00 - 260+00	R			10			1076		1				
5-D	255+50	L&R	124	26					0.26			2	267	1.2
6-D	253+93 - 255+43	L&R												
			124	26	10	20	3004	1076	0.26	2	1	2	267	1.2

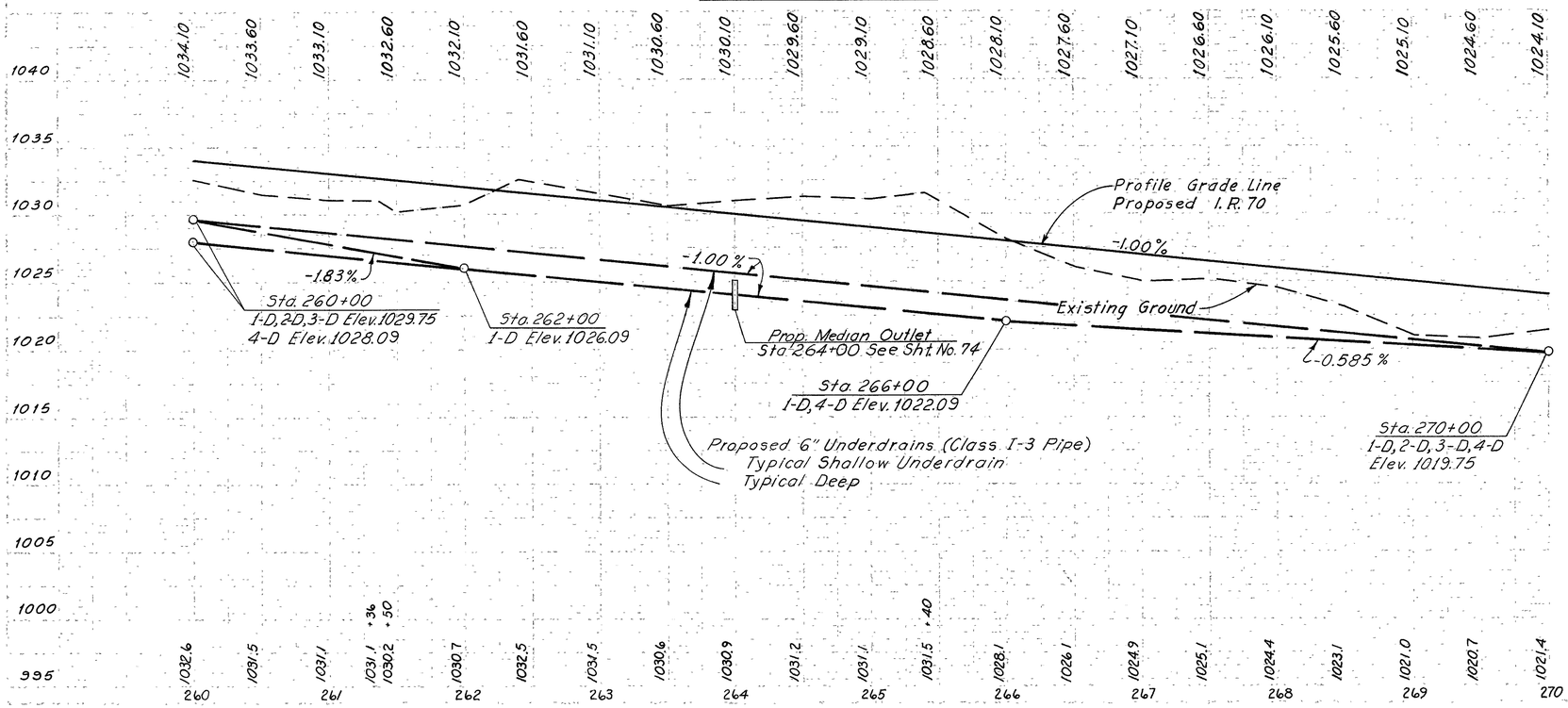
Drawing Reference: Sheet No. 73

Excavation	6576 C.Y.
Embankment	4326 C.Y.
Embankment+12%	4845 C.Y.

STA. 250+00 TO STA. 260+00

MONTGOMERY COUNTY
MOT. 40-2.73





Trees and stumps to be removed
12" - 18" 1

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 M.66(a) M.68(b) 15" L.F.	I-1 Pipe Class E-1 12" L.F.	I-1 Pipe Class E-1 15" L.F.	I-1 Pipe Class F-1 6" L.F.	I-3 Underdrains 6" Shallow L.F.	I-3 Underdrains 6" Deep L.F.	I-5 Pipe Specials I-3 6" 60° Bend Wye Ea.	I-8 Catch Basins Std. 611.01 Type 'B' Ea.	I-2 Masonry Head-walls Ea.	I-10 Dumped Rock 18" C.Y.
1-D	260+00 - 270+00	L				10	1002		1			
2-D	260+00 - 270+00	L				10	1002					
3-D	260+00 - 270+00	R				10	1002		1			
4-D	260+00 - 270+00	R				10		1016	1			
5-D	264+00	L&R	70	26	52					1	2	1.5
6-D	262+43 - 263+93	L&R								1	2	.26
			70	26	52	30	2004	2016	1	2	1	2	.26	1.5

Drawing Reference Sheet No. 74

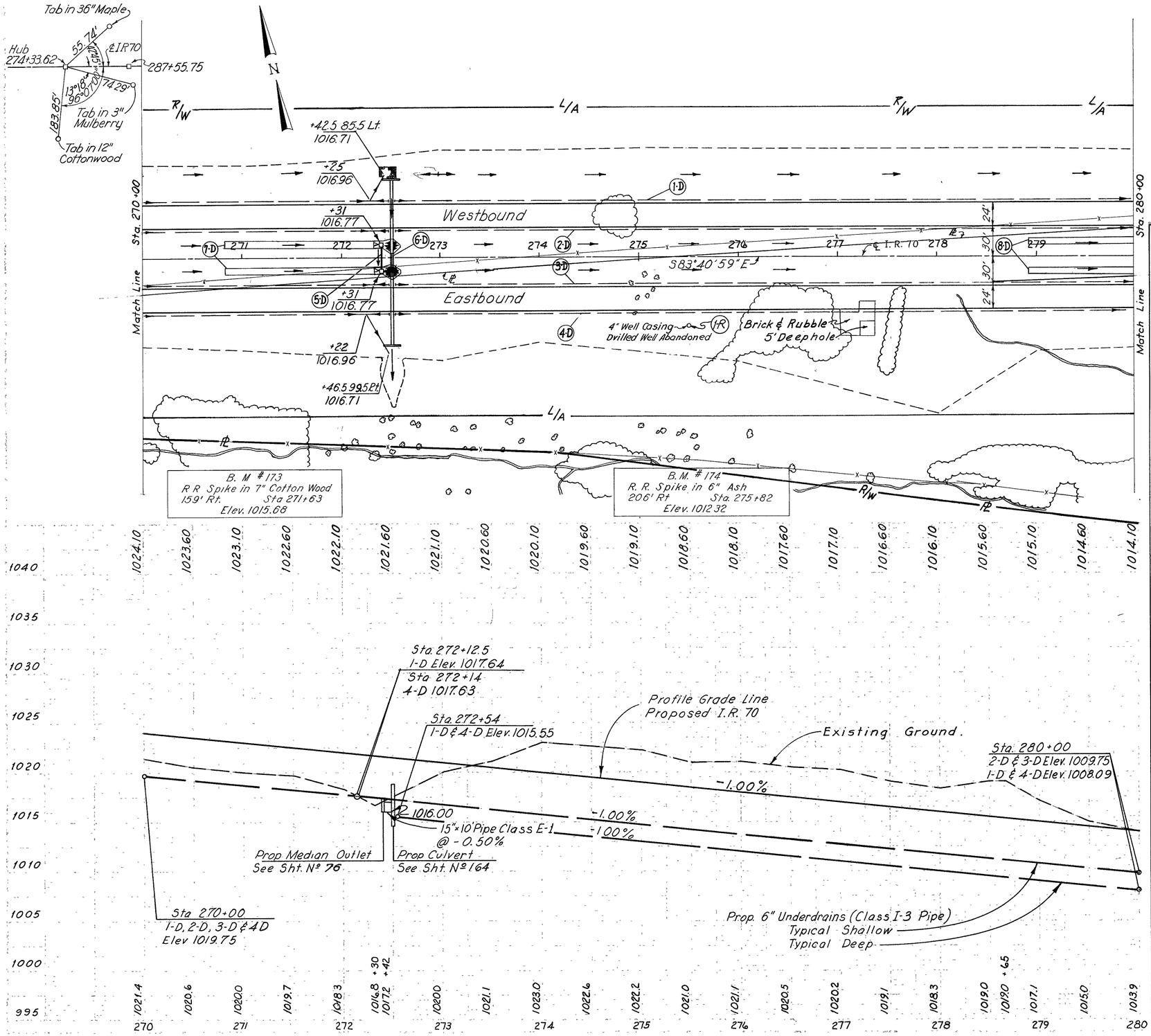
L-120 Jute Matting S.Y. 267 267

Excavation	10303 C.Y.
Embankment	4335 C.Y.
Embankment +12%	4855 C.Y.

STA. 260+00 TO STA. 270+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-273



ESTIMATED QUANTITIES

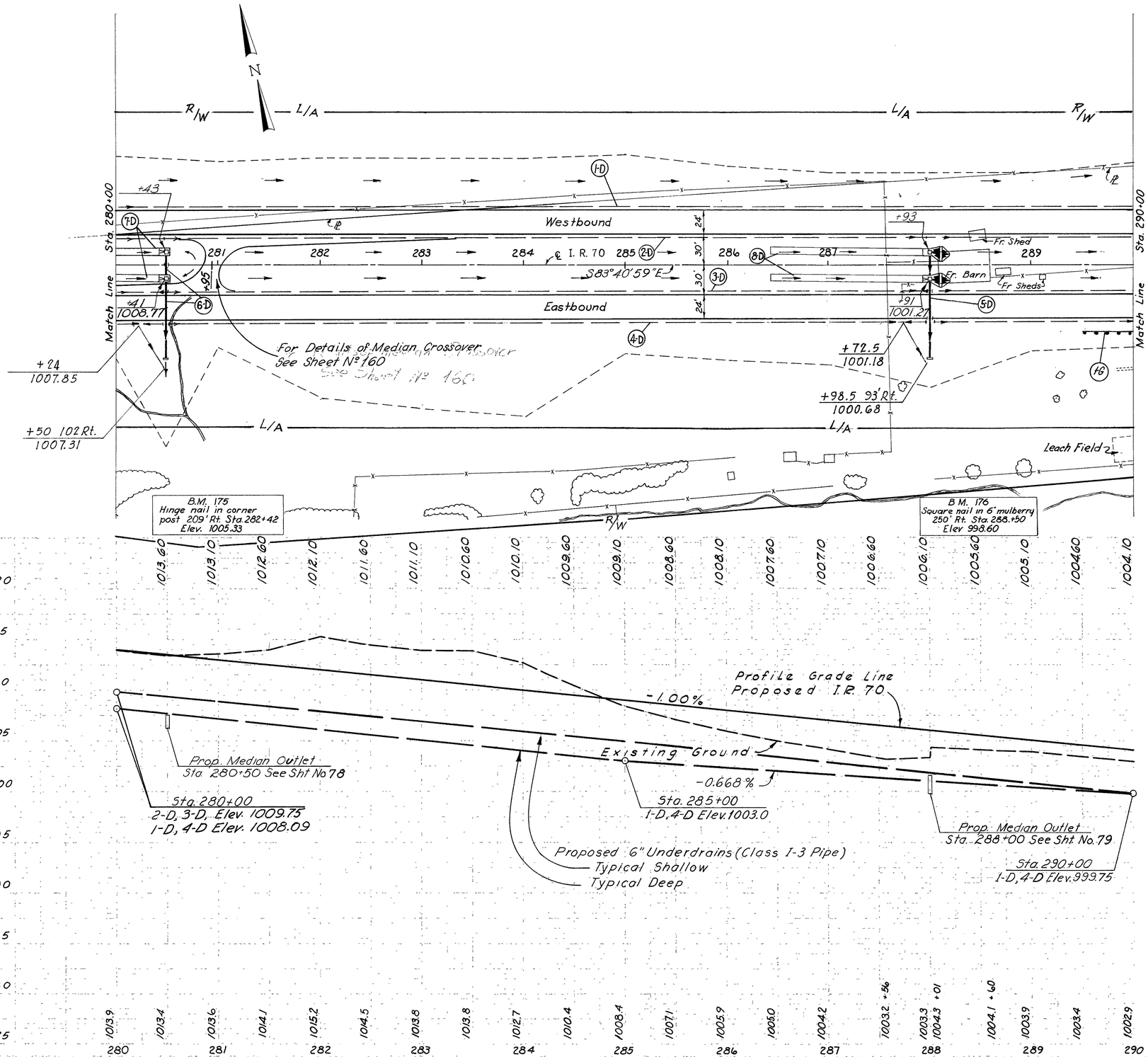
REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 (M-66(a)) 33" L.F.	I-1 Pipe Class E-1 12" L.F.	I-1 Pipe Class E-1 15" L.F.	I-1 Pipe Class F-1 6" L.F.	I-1 Pipe Class F-1 8" L.F.	I-3 Class I-3 Underdrains 6" Shallow L.F.	I-3 Class I-3 Underdrains 6" Deep L.F.	I-2 Masonry Headwalls Type "A" C.Y.	I-5 Pipe Specials Class I-3 6"x 60° Wye Ea.	I-5 Pipe Specials Class A-1 33"x33"x45° Tee Ea.	I-8 Catch Basins Std.#8 Ea.	I-10 Rip-rap 6" S.Y.	L-10 Sodding S.Y.	L-120 Jute Matting S.Y.	E-3 Special Drilled Well Abandoned Each	E-3 Channel Exc. C.Y.	Drawing Reference Sheet No.
1-D	270+00 - 280+00	L				10	267	747											
2-D	270+00 - 280+00	L				10	1000				1								
3-D	270+00 - 280+00	R				10	1000				1								
4-D	270+00 - 280+00	R				10	283	747			1								
5-D	272+40	L&R		26	10							1	2	23.2	7.0	267		77	76
6-D	272+50	L&R	16.2							23.2						190	1		164
7-D	270+83 - 272+33	L&R																	
8-D	278+93 - 280+00	L&R																	
HR	275+50	R																	
			162	26	10	20	2550	1494	23.2	4	1	1	2	23.2	7.0	457	1	77	

Excavation 16315 C.Y.
Embankment 4630 C.Y.
Embankment +12% 5195 C.Y.

STA. 270+00 TO STA. 280+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 M-66(a) M-68(a) 15" L.F.	I-1 Pipe Class E-1 12" L.F.	I-1 Pipe Class F-1 6" L.F.	I-1 Pipe Class F-1 8" L.F.	I-3 Underdrains 6" Shallow L.F.	I-3 Underdrains 6" Deep L.F.	I-2 Masonry Headwalls Type "E" C.Y.	I-5 Pipe Specials I-3 6"-60° Wye Ea.	I-5 Pipe Specials I-3 6"-60° Bend Ea.	I-8 Catch Basins Std. "B" Ea.	I-15 Guard Rail Steel Beam Standard L.F.	L-120 Jute Matting S.Y.	Drawing Reference Sheet No.
4-D	280+00 - 290+00	L					1000				2				79
2-D	280+00 - 290+00	L			20	1004									78
3-D	280+00 - 290+00	R			20	1004									
4-D	280+00 - 290+00	R				20		1070		2					
5-D	288+00	L&R	80	26					.26			2		76	
6-D	280+50	L&R	80	26					.26			2		267	
7-D	280+50 - 280+43	L&R											50		
8-D	286+43 - 287+93	L&R											50	343	
1-6	289+50 - 290+00	R													
			160	52	40	20	2008	2070	.52	4	2	4			

Excavation	7945 C.Y.
Embankment	5367 C.Y.
Embankment+12%	6011 C.Y.

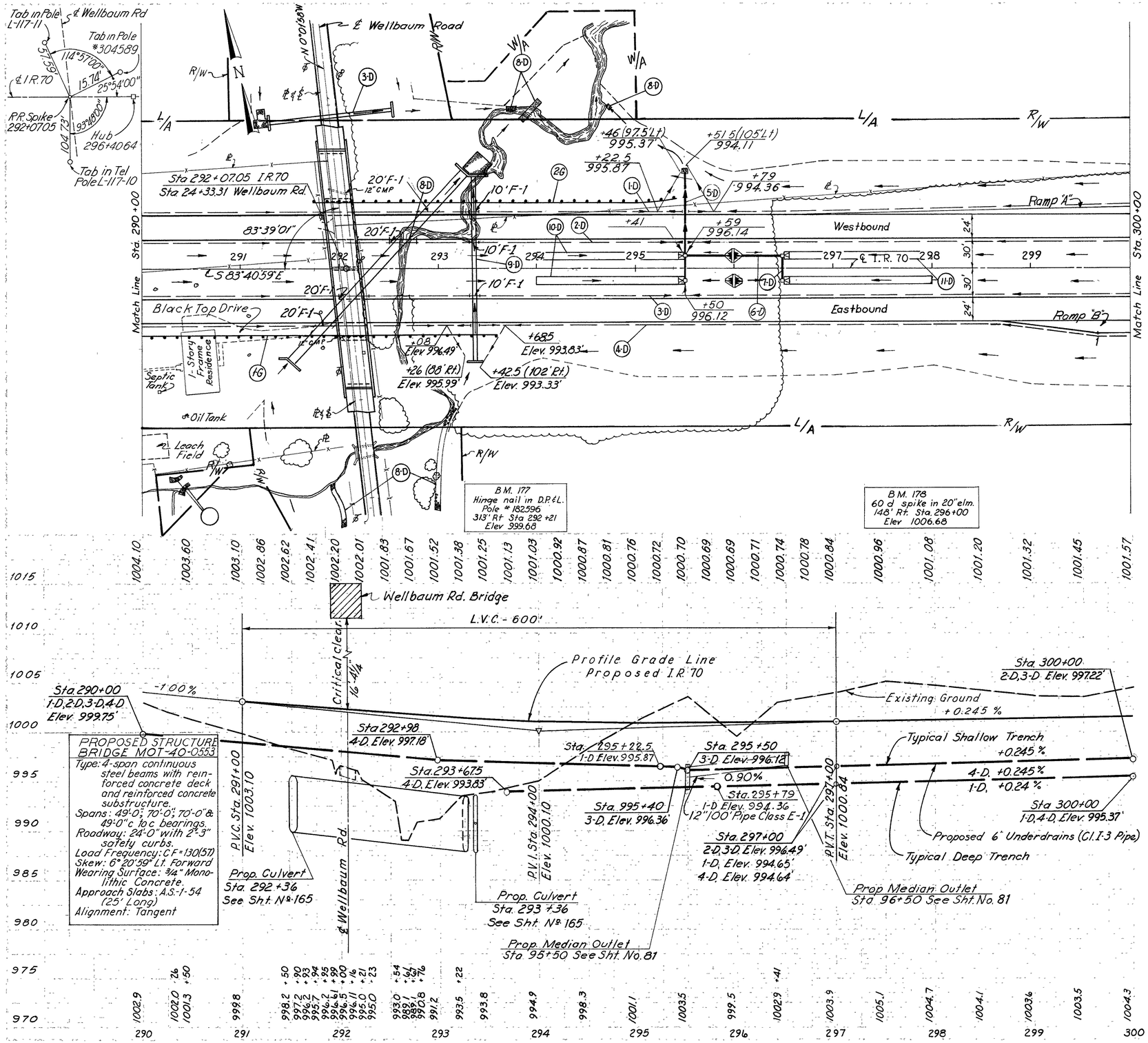
STA. 280+00 TO STA. 290+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees and stumps to be removed:

12" - 18"	103
18" - 24"	21
24" - 30"	26
30" - 36"	2
36" - 42"	3



ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 15"	I-1 Pipe Class A-1 18"	I-1 Pipe Class A-1 36"	I-1 Pipe Class E-1 12"	I-1 Pipe Class G-1 106'+6.7(b)	Class F-1 6"	Class F-1 8"	Class I-3 Underdrains Shallow	Class I-3 Underdrains Deep	I-2 Masonry Headwalls Type 'E'	I-2 Masonry Headwalls Type 'B'	I-2 Masonry Headwalls Type 'C'	I-5 Pipe Specials I-3 8"-60°-6"x6"x6" Wye	I-5 Pipe Specials I-3 Tee	I-8 Catch Basins Std #8	I-10 Dumped Rock Channel Protection 18"	I-10 Dumped Rock Channel Protection 30"	I-10 Rip-rap 6"	I-15 Guard Rail Steel Type	E-3 Channel Exc.	L-10 Sodding	I-14 Paved Gutter Type 3	L-120 Jute Matting	Drawing Reference Sheet No.
			L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	C.Y.	C.Y.	C.Y.	Ea.	Ea.	Ea.	C.Y.	C.Y	S.Y.	L.F.	C.Y.	S.Y.	L.F.	S.Y.	
1-D	290+00 - 300+00	L						30	20	350	488					2										
2-D	290+00 - 300+00	L						50		978						2										
3-D	290+00 - 300+00	R						40		974						1										
4-D	290+00 - 300+00	R						20	20	340	703					2									81	
5-D	295+50	L&R	84			26						0.26					2		0.7							
6-D	295+50 - 296+50	L				100																			81	
7-D	296+50	L&R				26																				
8-D	292+36	L&R			190	128		264						503.21.0				366	35.2	39.1	1364	96	214	267	165	
10-D	293+93 - 295+43	L&R																								
11-D	296+57 - 298+07	L&R																								
1-G	290+00 - 293+62.5	R																								
2-G	291+75 - 295+37.5	L																			362.5					
			84	190	128	152	264	140	40	2842	1191	0.26	503.21.0		6	1	4	366	35.9	39.1	362.5	96	214	267	534	

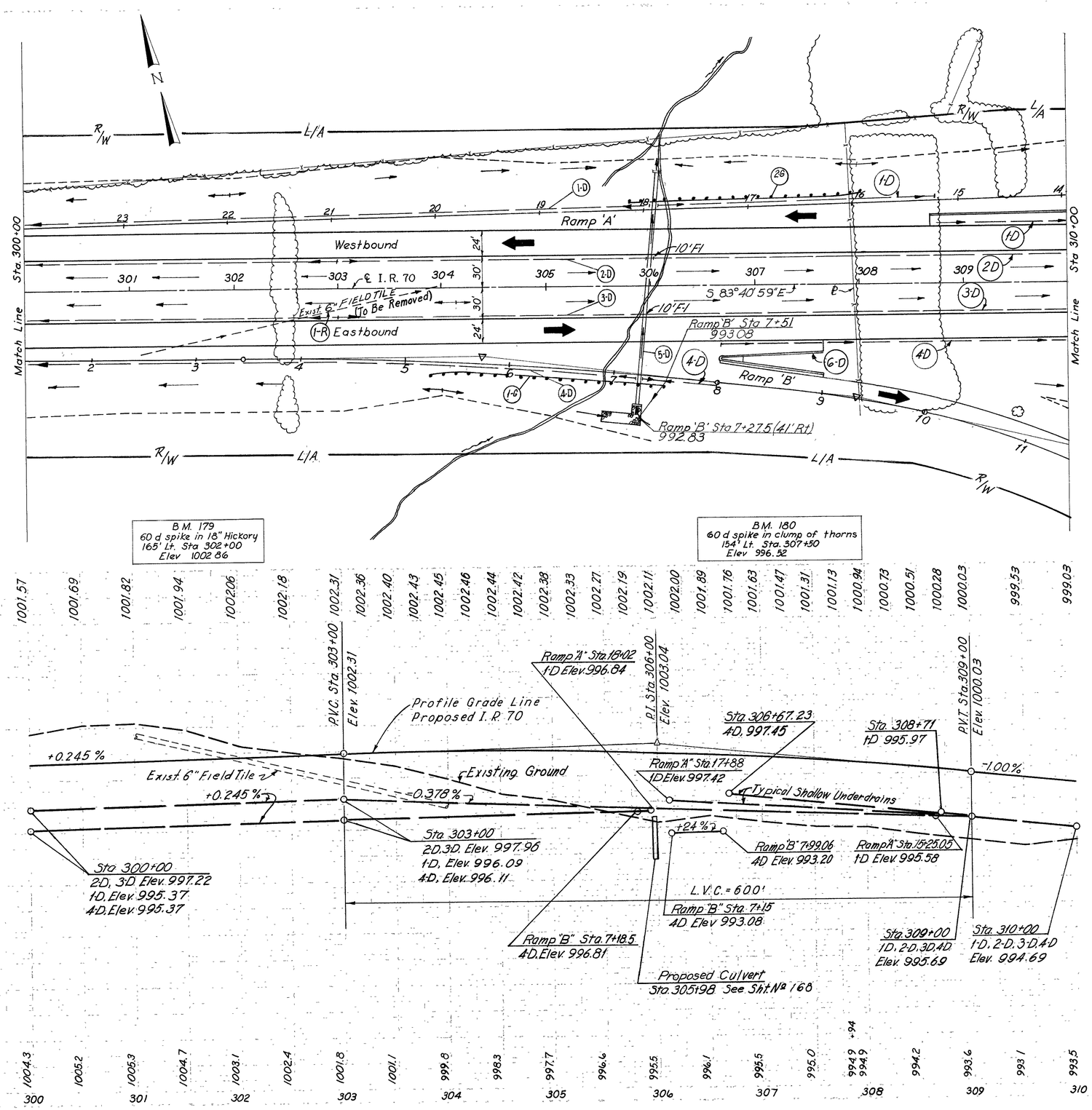
Excavation 12940 C.Y.
Embankment 14998 C.Y.
Embankment+12% 16798 C.Y.

STA. 290+00 TO STA. 300+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees and stumps to be removed
12" - 18" 30
18" - 24" 9



ESTIMATED QUANTITIES

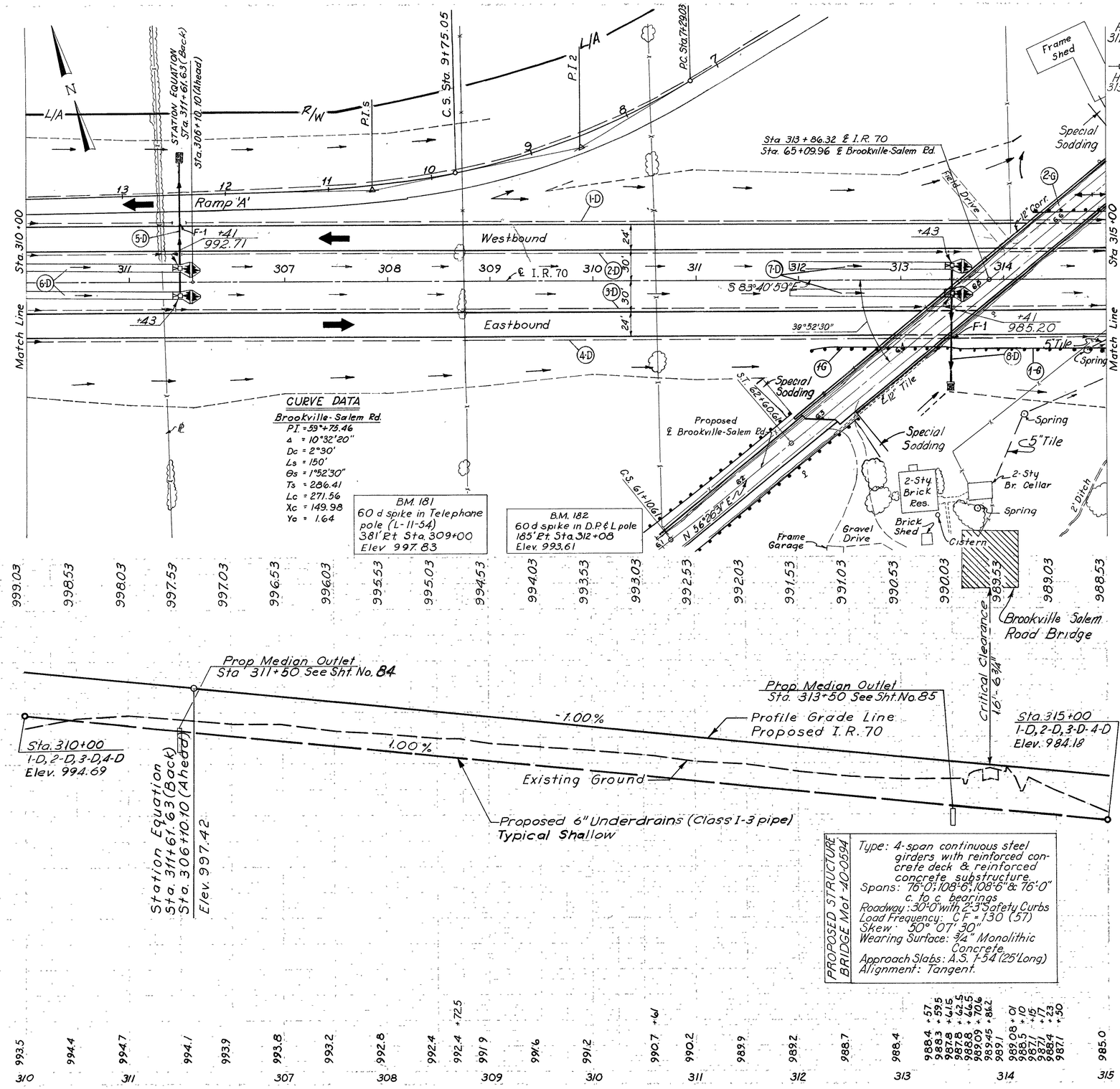
REF. NO.	STATION TO STATION	SIDE	Class A M-6.6(a) 42" L.F.	I-1 Pipe Class F-1 8" L.F.	I-1 Pipe Class F-1 6" L.F.	I-1 Pipe Class I-3 Underdrains Shallow L.F.	I-1 Pipe Class I-3 Underdrains Deep L.F.	I-2 Masonry Headwalls Type "C" C.Y.	I-5 Pipe Special I-3 6" "C" 60° Wye EA.	I-15 Guard Rail Steel Beam Type Std. L.F.	I-12 Concrete Curb Std. Type 6	E-3 Channel Exc. C.Y.	L-10 Sodding	T-10 Rip-Rap 6"	E-12 Pipe Removal 15"Under L.F.	I-21 Med. Paving 4" S.Y.	Drawing Reference Sheet No.
1-D	300+00 - 310+00	L				598	392										14
2-D	300+00 - 310+00	L			10	990											
3-D	300+00 - 310+00	R			10	990											150
4-D	300+00 - 310+00	R		10		586	432	22	1								
5-D	305+98	L&R	224									14	8.5	54			168
1-G	303+89 - 300+14	R								225							
2-G	305+80 - 308+05	L								225							
1-R	302+00 - 303+50	R													150		150
6-D	306+67 - 207+67										103						
	TOTALS		224	10	20	3,164	824	22	1	450	103	14	85	54	150	14	14

Excavation 7741 C.Y.
Embankment 20,791 C.Y.
Embankment +12% 23,286 C.Y.

STA. 300+00 TO STA. 310+00

I-70 · 1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



CURVE DATA
Brookville-Salem Rd.
P.I. = 59+75.46
Δ = 10°32'20"
Dc = 2°30'
Ls = 150'
Θs = 1°52'30"
Ts = 286.41
Lc = 271.56
Xc = 149.98
Yo = 1.64

BM. 181
60 d spike in Telephone pole (L-11-54)
381' Rt Sta. 309+00
Elev 997.83

BM. 182
60 d spike in D.P.&L. pole
185' Rt Sta. 312+08
Elev. 993.61

PROPOSED STRUCTURE BRIDGE Mot 40-0594

Type: 4-span continuous steel girders with reinforced concrete deck & reinforced concrete substructure.
Spans: 76'-0", 108'-6", 108'-6" & 76'-0" c. to c. bearings
Roadway: 30'-0" with 2'-3" Safety Curbs
Load Frequency: C F = 130 (51)
Skew: 50° 07' 30"
Wearing Surface: ¾" Monolithic Concrete
Approach Slabs: A.S. T-54 (25' Long)
Alignment: Tangent.

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	1-1 Pipe Class A-1 15"	1-1 Pipe Class E-1 12"	1-1 Pipe Class F-1 6"	1-2 Class I-3 Underdrains Shallow	1-2 Class I-3 Underdrains Deep	1-5 Masonry Headwalls Type 'E'	1-5 Pipe Specials I-3 6"x60° Bend	1-5 Pipe Specials I-3 6"x60° wye	1-8 Catch Basins Std. #8	I-15 Guard Rail Steel Beam Deep	I-15 Guard Rail Steel Beam Std.
			L.F.	L.F.	L.F.	L.F.	L.F.	C.Y.	EA.	EA.	EA.	L.F.	L.F.
1-D	310+00 – 315+00	L			10	990							
2-D	310+00 – 315+00	L			20	1004			1	1			
3-D	310+00 – 315+00	R			20	1004			1	1			
4-D	310+00 – 315+00	R			10	990							
5-D	311+50	L&R	104	26				.26			2		
6-D	309+93 – 311+43	L&R										280	
7-D	311+93 – 313+43	L&R						.26			2		
8-D	313+50	L&R	88	26								69	
1-G	312+17 – 315+00	R											
2-G	314+31 – 315+00												
3-G													
4-G													
			192	52	60	3988		.52	2	2	4	349	

Drawing Reference	Sheet No.	L-120 Jute Matting S.Y.	I-10 Dumped Rock 18" C.Y.
	84	267	1.5
	85	267	0.9
		534	2.4

Excavation	3098 C.Y.
Embankment	11488 C.Y.
Embankment+12%	12867 C.Y.

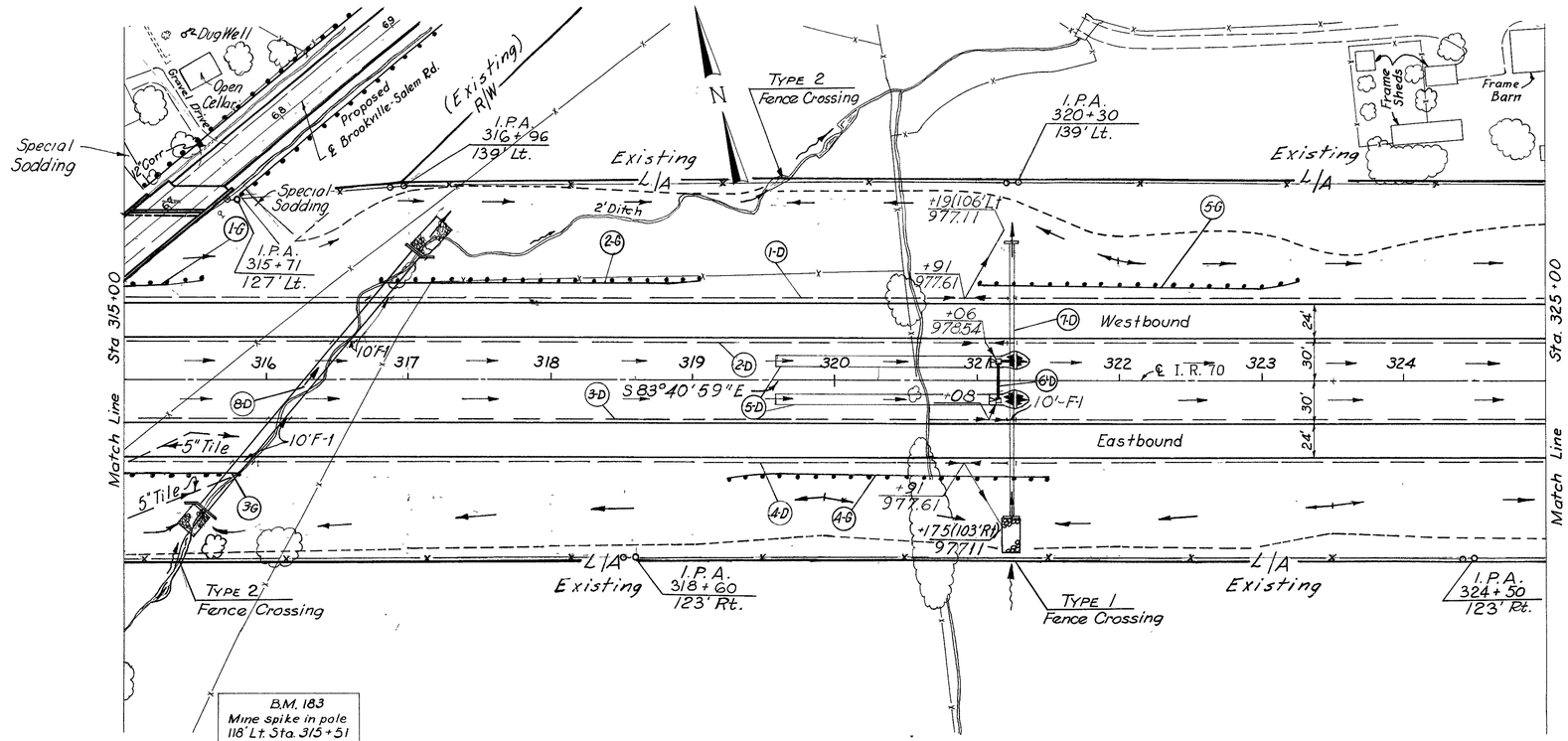
STA. 310+00 TO STA. 315+00

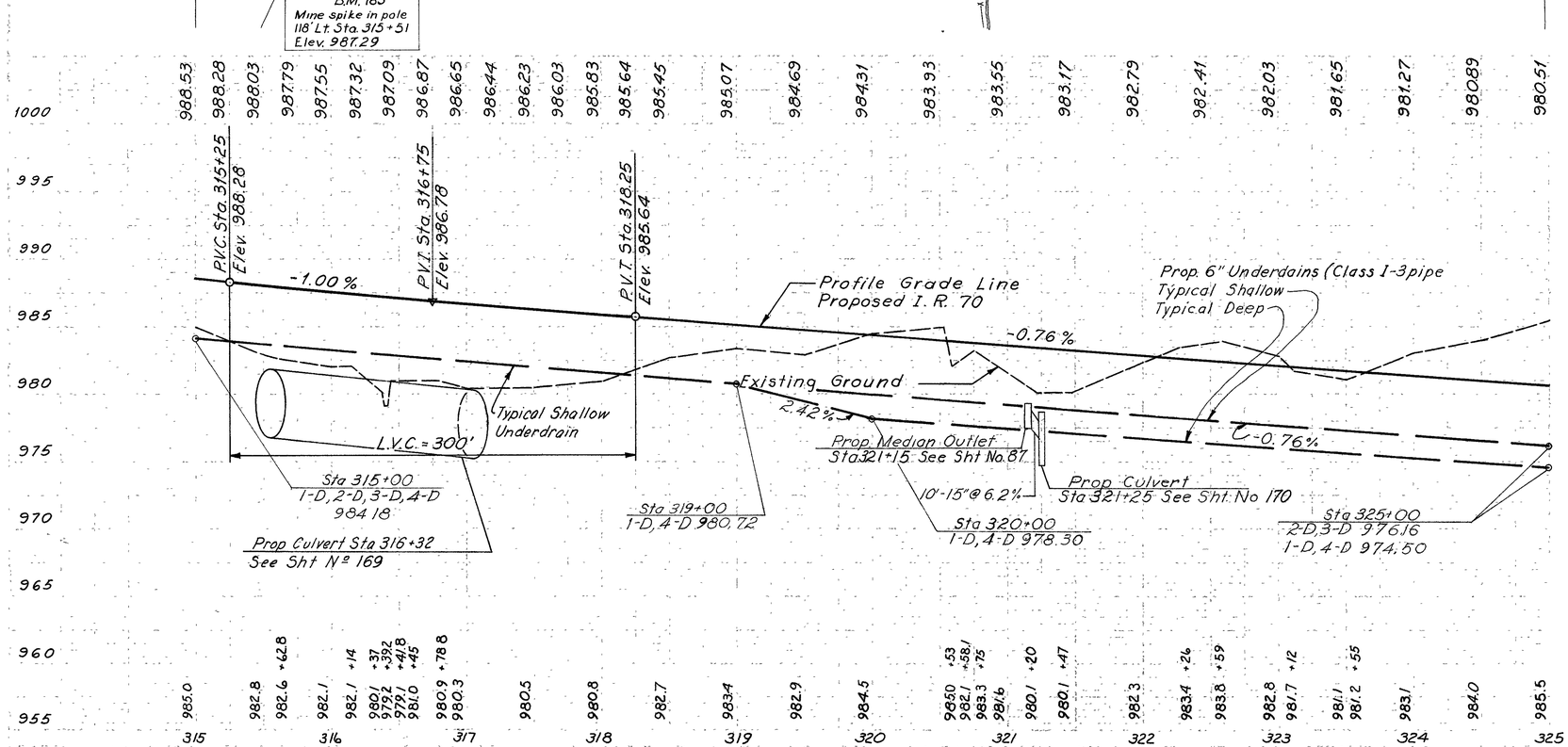
I-70-1(15)120

MONTGOMERY COUNTY
MOT. 40-2.73

NOTE:
For length of fence on this sheet. See Summary of Fence Quantities Sheet No. 247

Trees and stumps to be removed
18" - 24" 1



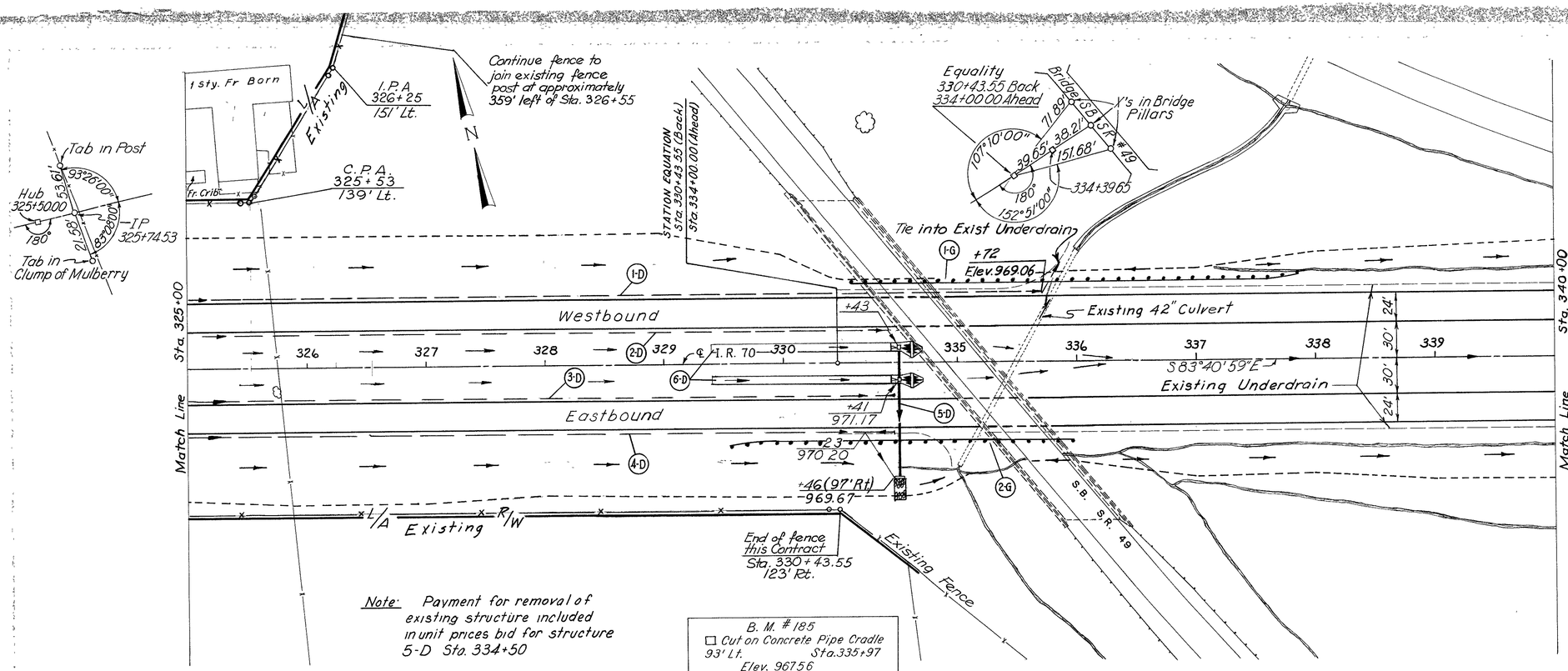


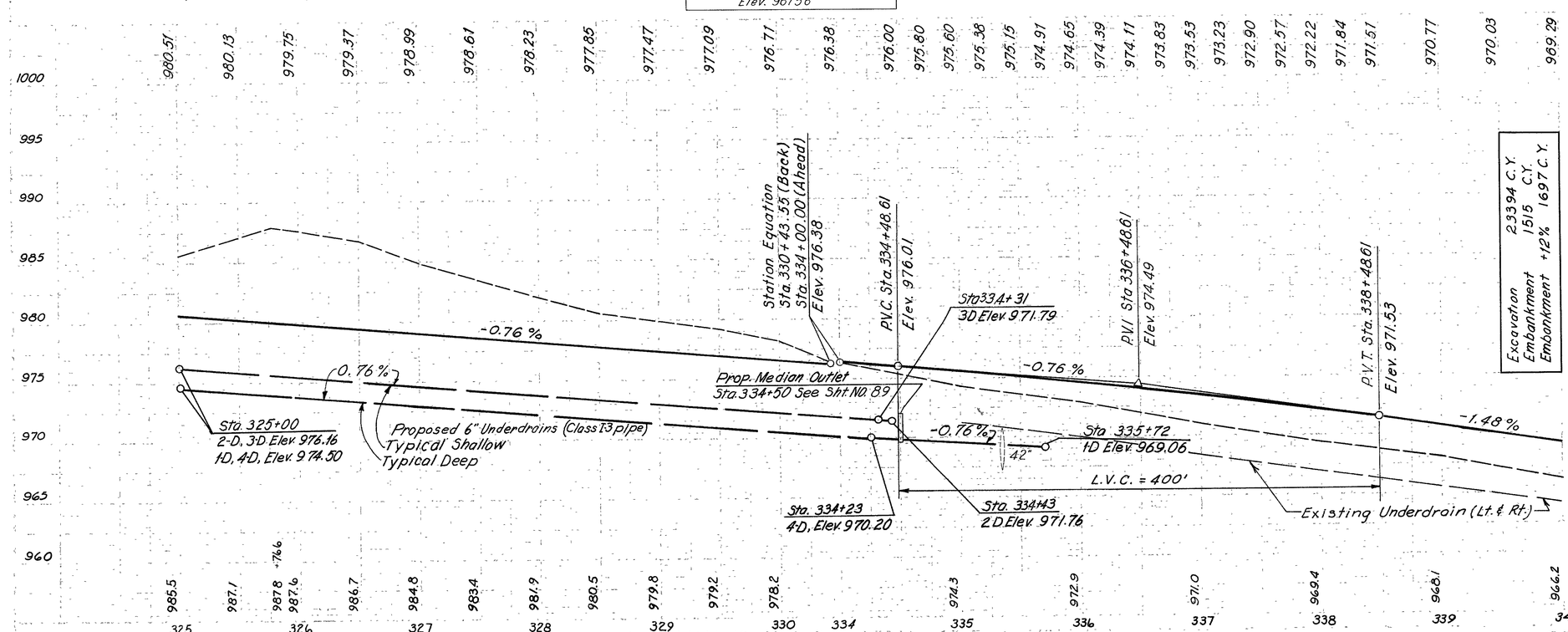
ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class A M466(a) M466(b) 60" L.F.	Class A 36" L.F.	Class E-1 12" L.F.	Class E-1 15" L.F.	Class F-1 6" L.F.	Class F-1 8" L.F.	Class I-3 Underdrains 6" Shallow L.F.	Class I-3 Underdrains 6" Deep L.F.	I-2 Masonry Headwalls Type "B" C.Y.	I-2 Masonry Headwalls Type "C" C.Y.	I-5 Pipe Specials I-3 6"x60° Bend Ea.	I-3 6"x60° Wye Ea.	I-3 Skew Tee Ea.	I-8 Catch Basins Std. #8 Ea.	I-10 Rip Rap 6" S.Y.	I-10 Dumped Rock 30" C.Y.	I-15 Guard Rail Steel Beam Standard L.F.	L-10 Sodding S.Y.	L-120 Jute Matting S.Y.	E-3 Channel Exc. C.Y.	See Sheet No.
1-D	315+00 - 325+00	L					10	10	390	640					1								
2-D	315+00 - 325+00	L					20		1010														
3-D	315+00 - 325+00	R					30		996				1										
4-D	315+00 - 325+00	R					10	10	390	655													
5-D	319+58 - 321+08	L&R														2							
6-D	321+15	L&R			26	10										1	27.1			7.2			170
7-D	321+25	L&R		188													308	34.7		12.3		7.3	169
8-D	316+32	L&R	234																56				
1-G	315+00 - 315+56	L																	225				
2-G	316+79 - 319+04	L																	825				
3-G	315+00 - 315+82.5	R																	225				
4-G	319+25-321+50	R																	225				
5-G	321+00-323+25	L																	225				
			234	188	26	10	70	20	2786	1295	43	16	1	3	1	2	579	34.7	8135	195	267	73	

Excavation	11843 C.Y.
Embankment	11750 C.Y.
Embankment +12%	13160 C.Y.

STA. 315+00 TO STA. 325+00





I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

NOTE:
For length of fence on this sheet, See Summary of Fence Quantities Sheet No. 247

Note: Payment for removal of existing structure included in unit prices bid for structure 5-D Sta. 334+50

Excavation 23394 C.Y.
Embankment 1515 C.Y.
Embankment +12% 1697 C.Y.

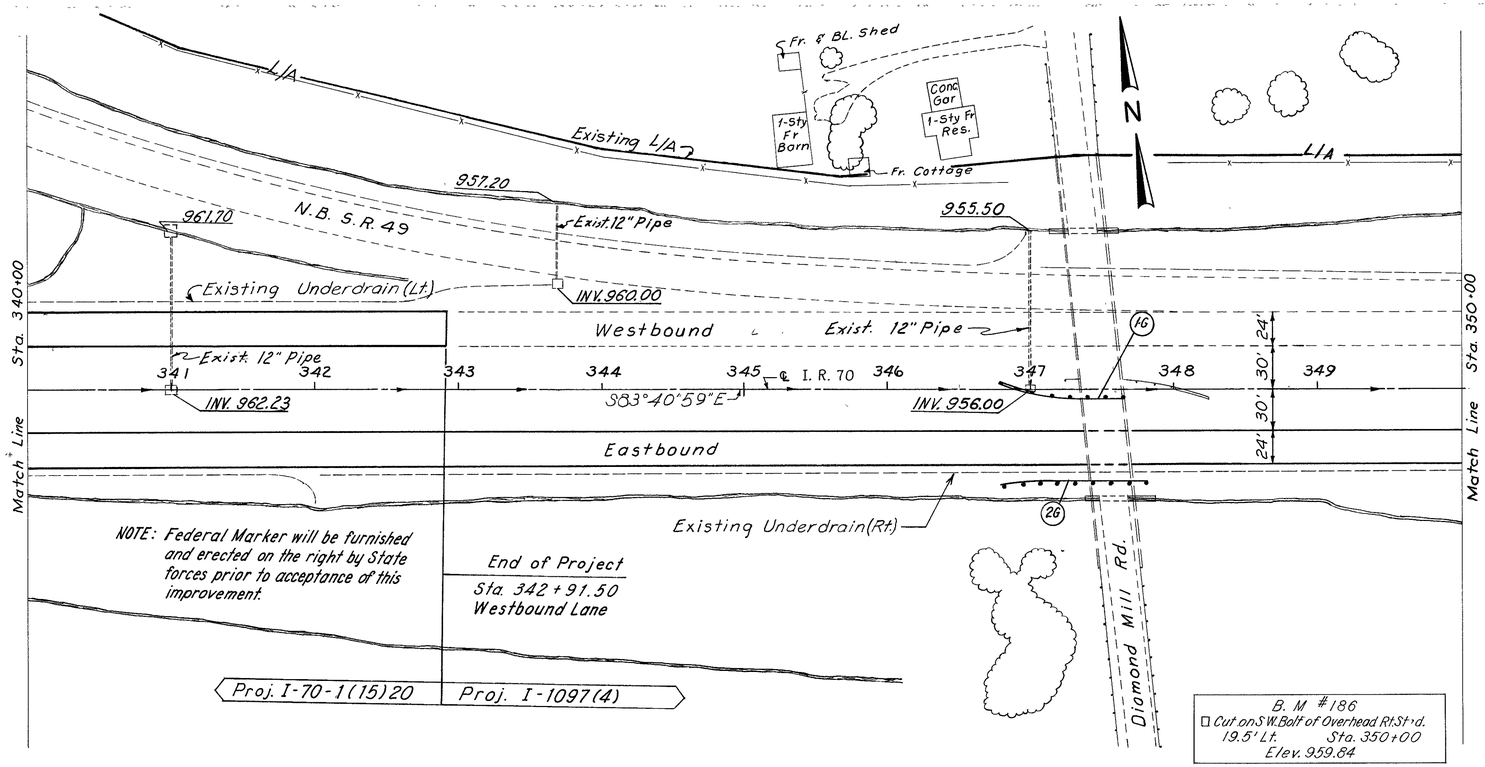
ESTIMATED QUANTITIES

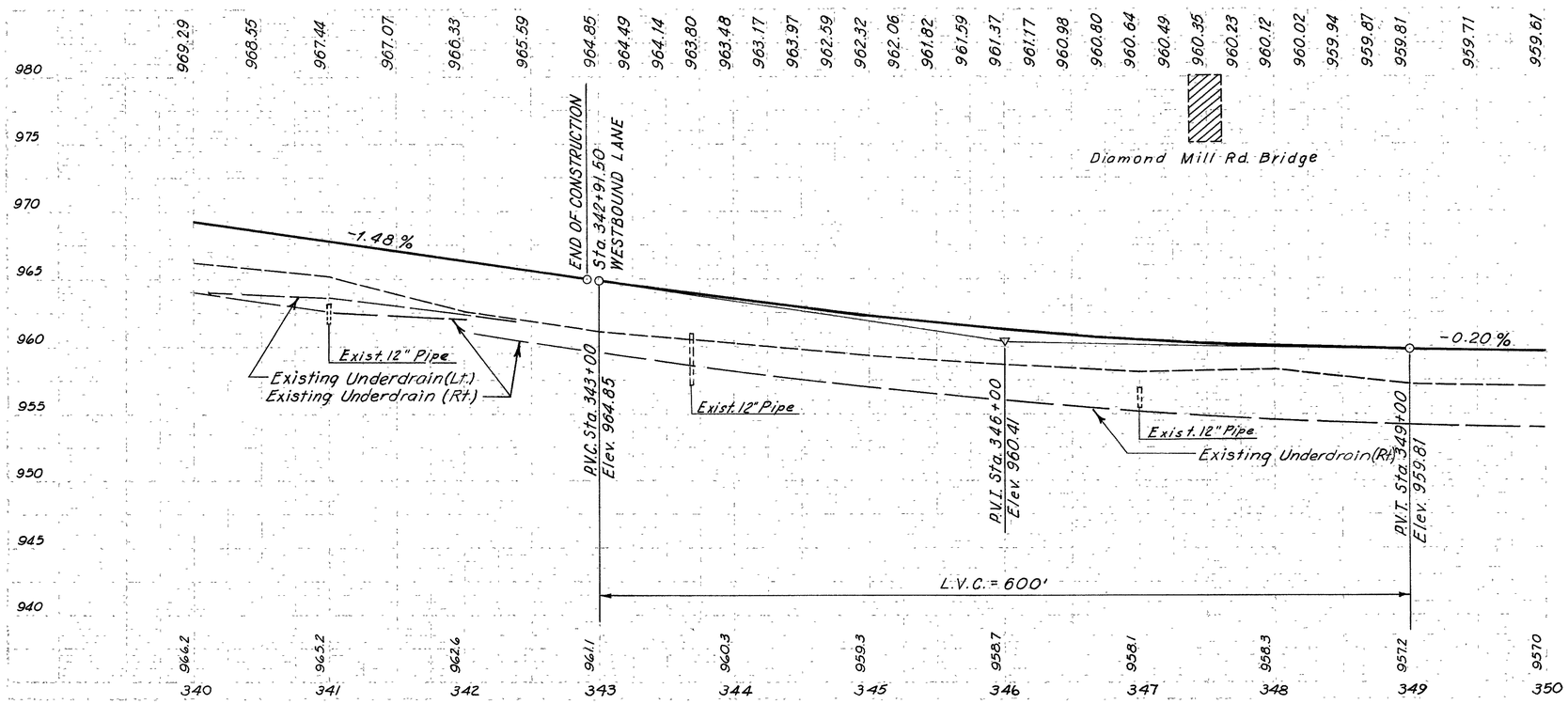
REF. NO.	STATION TO STATION	SIDE	I-1 Pipe						I-5		I-2		I-15	L-120	I-10					
			Class A-1 M-6.6(a) M-6.8(b)	Class E-1	Class F-1		Class I-3 Underdrains 6"		Pipe Specials I-3		Masonry Head-Walls	Catch Basins	Guard Rail Steel Beam	Jute Matting	Dumped Rock					Drawing Reference
			15"	12"	6"	8"	Shallow	Deep	6"x60° Wye	6"x60° Bend	Type "E"	Std. #8	Standard		18"					
			L.F.	L.F.	L.F.	L.F.	L.F	L.F.	L.F.	L.F.	C.Y.	Ea.	L.F.	S.Y.	C.Y.					
1-D	325+00 - 335+72	L						746		1										
2-D	325+00 - 334+50	L			10		598			1										
3-D	325+00 - 334+48	R			10		598		1											
4-D	325+00 - 334+48	R				10		628	1											
5-D	334+50	L&R	84	26							.26	2			1.5					89
6-D	329+38 - 334+43	L&R												267						
1-G	334+12 - 337+87	L											375							
2-G	329+51.55-335+95.5	R.											287.5							
			84	26	20	10	1196	1374	2	2	.26	2	662.5	267	1.5					

STA. 325+00 TO STA. 340+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73





ESTIMATED QUANTITIES

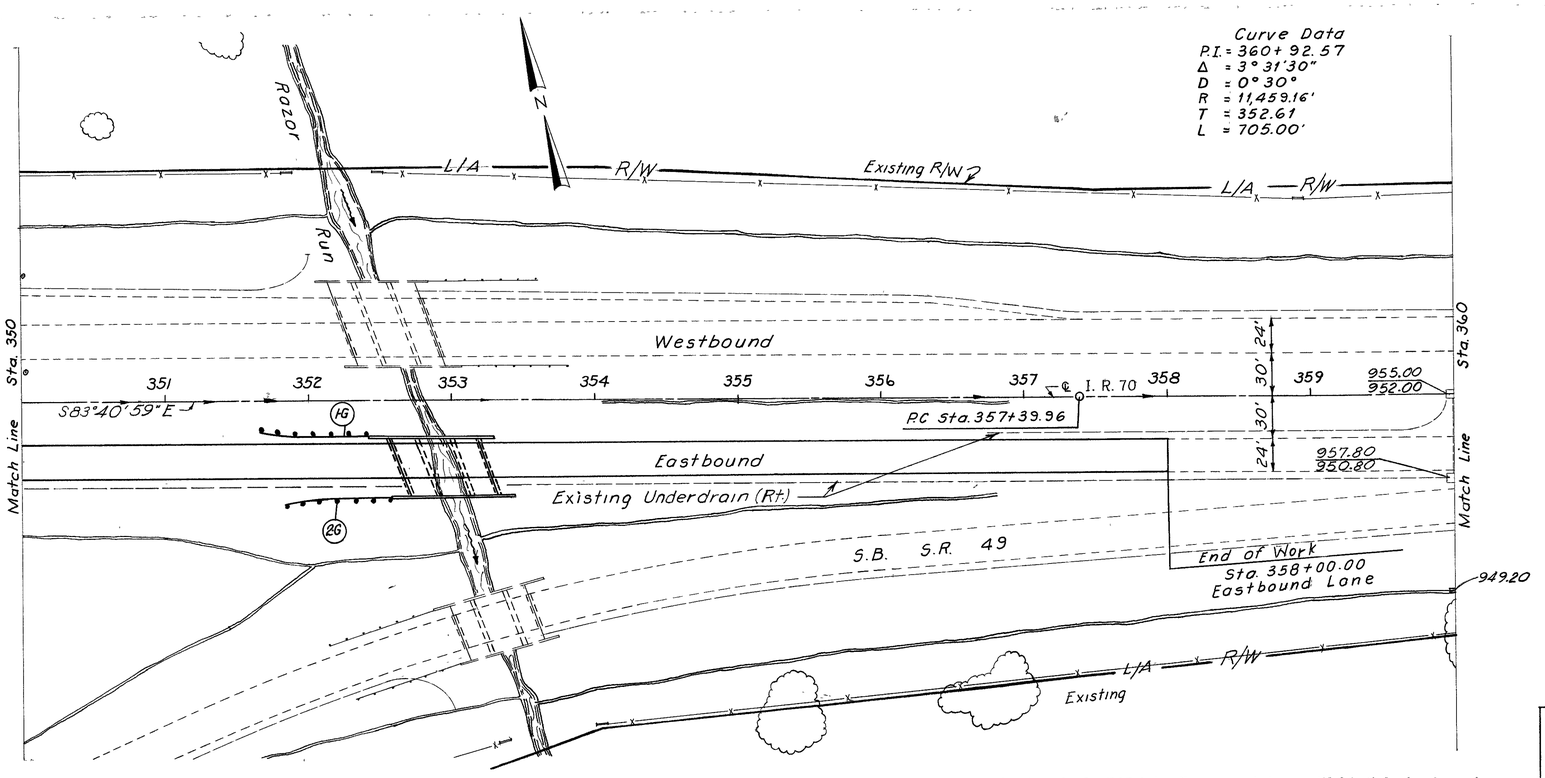
REF. NO.	STATION TO STATION	SIDE	I-15 Guard Rail Steel Beam Type Standard Barrier L.F.	Drawing Reference Sheet No.
1-G	346+80 - 347+67.5	℄	62.5	
2-G	346+80 - 347+80	R	100	
			162.5	25

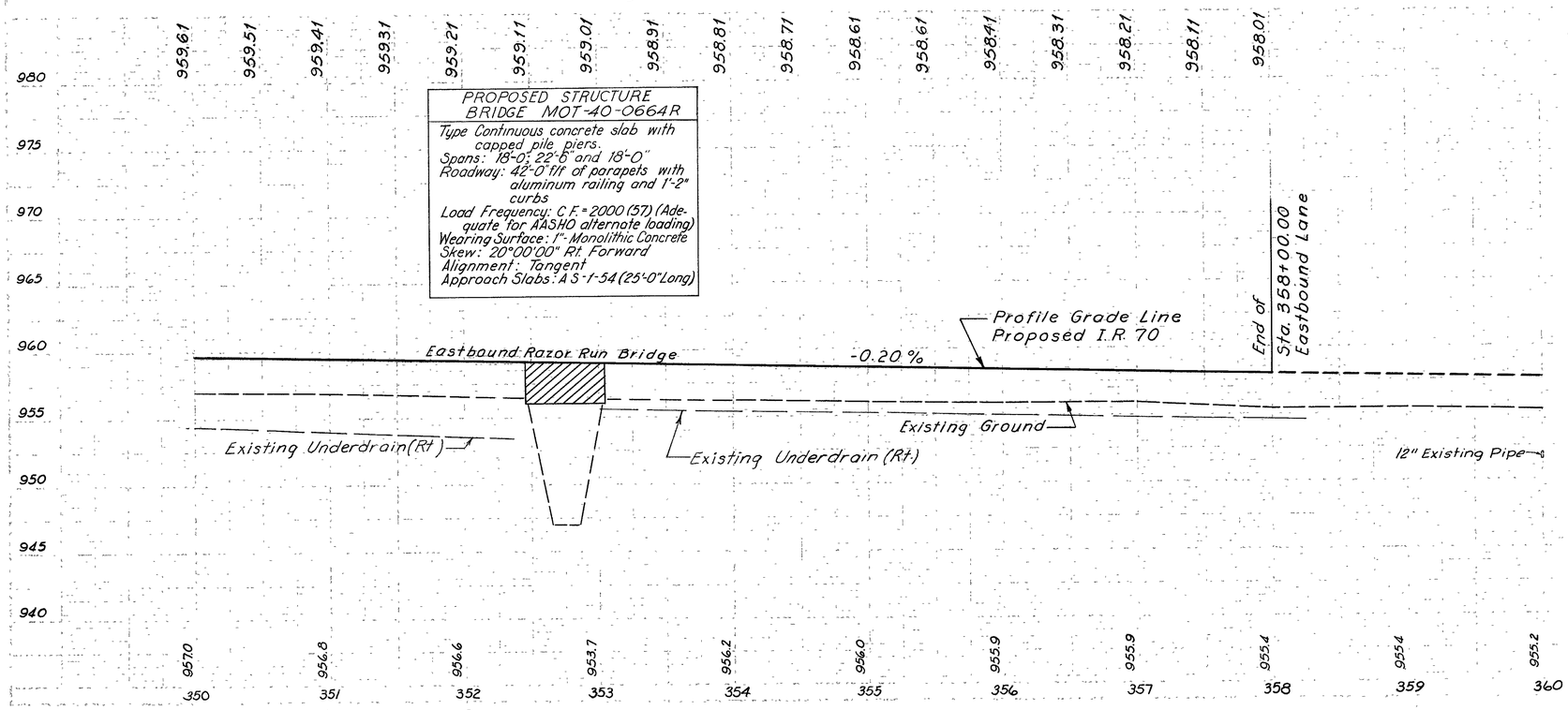
Excavation	1,919 C.Y.
Embankment	1,454 C.Y.
Embankment+12%	1,628 C.Y.

STA. 340+00 TO STA. 350+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73





ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-15 Guard Rail Steel Beam Type STD.
			L.F.
1G	351+66 - 352+41	L	75
2G	351+82 - 352+57	R	75
			150

Excavation	264 C.Y.
Embankment	794 C.Y.
Embankment +12 %	889 C.Y.

STA. 350+00 TO STA. 360+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Curve Data
PI = 360+92.57
Δ = 3°31'30"
D = 0°30'
R = 11,459.16'
T = 352.61'
L = 705.00'

N

L/A R/W Existing L/A R/W

947.00

Match Line Sta. 360

Exist. 42" Pipe

Westbound

361 362 363 364 365 366 ℄ I. R. 70 367 368 369

Sta. 370 Match Line

24' 30' 30" 24'

P.T. Sta. 364+44.96

954.00
951.00

Eastbound

Exist. 12" Pipe

S.B. S.R. 49

948.3

944.66

L/A R/W Existing L/A R/W

B M # 187
Mine Spike in 30" Oak
167' Rt Sta 360+10
Elev 949.60

980
975
970
965
960
955
950
945
940

12" Existing Pipe

42" Existing Pipe

12" Existing Pipe

955.2 955.2 955.2 954.8 954.2 954.0 954.1 953.9 953.5 953.2 953.0

360 361 362 363 364 365 366 367 368 369 370

ESTIMATED QUANTITIES												
REF. NO.	STATION TO STATION	SIDE										

Excavation
Embankment
Embankment+12%

STA. 360+00 TO STA. 370+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

41

MONTGOMERY COUNTY
MOT. 40-2.73

SUPERELEVATION TABLES

I.R. 70		Eastbound		Westbound	
Station	Lt. Edge Profile Gr.	℄ 12' Off P.G.	Rt. Edge 24' Off P.G.	℄ 12' Off P.G.	Rt. Edge 24' Off P.G.
144+00	1053.05	1053.36	1053.68	1052.74	1052.43
		Profile Grade +0.31'	Profile Grade +0.62'	Profile Grade -0.31'	Profile Grade -0.62'
		Full Super 0.026'/ft.			
152+00	1064.55	1064.86	1065.17	1064.24	1063.92
+25	1064.77	1065.08	1065.39	1064.46	1064.16
+50	1064.98	1065.29	1065.60	1064.67	1064.38
+75	1065.18	1065.48	1065.80	1064.86	1064.61
153+00	1065.36	1065.64	1065.96	1065.08	1064.83
+03.75	1065.38	1065.66	1065.98	1065.11	1064.87
+25	1065.53	1065.79	1066.07	1065.28	1065.06
+50	1065.68	1065.92	1066.12	1065.49	1065.29
+53.75	1065.70	1065.93	1066.12	1065.52	1065.32
+75	1065.82	1066.03	1066.14	1065.69	1065.50
154+00	1065.95	1066.15	1066.17	1065.88	1065.69
+25	1066.06	1066.25	1066.19	1066.05	1065.86
+50	1066.16	1066.35	1066.23	1066.21	1066.03
+75	1066.25	1066.43	1066.27	1066.36	1066.18
155+00	1066.32	1066.50	1066.33	1066.48	1066.31
+03.35	1066.33	1066.50	1066.33	1066.50	1066.33
+25	1066.38	1066.56	1066.38	1066.56	1066.38
+50	1066.42	1066.61	1066.42	1066.61	1066.42
+75	1066.45	1066.64	1066.45	1066.64	1066.45
156+00	1066.47	1066.65	1066.47	1066.65	1066.47
		NORMAL SECTION			
195+00	1033.69	1033.88	1033.69	1033.88	1033.69
+25	1033.82	1034.00	1033.82	1034.00	1033.82
+50	1033.94	1034.13	1033.94	1034.13	1033.94
+75	1034.06	1034.25	1034.06	1034.25	1034.06
+93.60	1034.15	1034.32	1034.14	1034.34	1034.17
196+00	1034.18	1034.34	1034.16	1034.37	1034.21
+25	1034.31	1034.41	1034.23	1034.49	1034.38
+50	1034.43	1034.47	1034.29	1034.62	1034.57
+75	1034.55	1034.53	1034.35	1034.74	1034.76
197+00	1034.67	1034.59	1034.41	1034.86	1034.94
+25	1034.80	1034.65	1034.47	1034.98	1035.12
+43.20	1034.88	1034.70	1034.51	1035.07	1035.26
+50	1034.92	1034.71	1034.51	1035.12	1035.33
+75	1035.04	1034.78	1034.51	1035.31	1035.57
198+00	1035.16	1034.83	1034.50	1035.49	1035.81
+22.00	1035.27	1034.91	1034.54	1035.63	1035.99
+25	1035.29	1034.92	1034.55	1035.65	1036.21

I.R. 70			Eastbound		Westbound	
Station	Median Offset	Lt. Edge Profile Gr.	℄ 12' Off P.G.	Rt. Edge 24' Off P.G.	℄ 12' Off P.G.	Rt. Edge 24' Off P.G.
198+50	42'	1035.41	1035.02	1034.64	1035.79	1036.18
+75		1035.53	1035.15	1034.76	1035.92	1036.30
199+00		1035.65	1035.27	1034.89	1036.04	1036.42
			Profile Grade -0.38'	Profile Grade -0.77'	Profile Grade +0.38'	Profile Grade +0.77'
			Full Super 0.032'/ft.			
235+00	42'	1047.67				
+50	42'	1047.55				
236+00	41.50'	1047.43				
+50	41'	1047.31				
237+00	40.50'	1047.19				
+50	40'	1047.07				
238+00	39.50'	1046.95				
+50	39'	1046.83				
239+00	38.50'	1046.71				
+50	38'	1046.59				
240+00	37.50'	1046.47				
+50	37'	1046.35				
241+00	36.50'	1046.23				
+50	36'	1046.11				
242+00	35.50'	1045.99				
+50	35'	1045.87				
243+00	34.50'	1045.75				
+50	34'	1045.63				
244+00	33.50'	1045.51				
+50	33'	1045.39				
245+00	32.50'	1045.27				
+50	32'	1045.15				
246+00	31.50'	1045.03	1044.65	1044.26	1045.42	1045.80
+25	31.25'	1044.97	1044.59	1044.20	1045.36	1045.74
+50	31'.	1044.91	1044.53	1044.14	1045.30	1045.68
+75	30.75'	1044.85	1044.48	1044.10	1045.24	1045.60
+88.40		1044.82	1044.46	1044.09	1045.20	1045.54
247+00	30.50'	1044.79	1044.45	1044.09	1045.15	1045.48
+04.00		1044.78	1044.45	1044.10	1045.12	1045.45
+25	30.25'	1044.73	1044.44	1044.14	1045.02	1045.31
+50	30'	1044.66	1044.43	1044.20	1044.89	1045.14
+67.20		1044.60	1044.42	1044.30	1044.79	1045.02
+75		1044.58	1044.41	1044.21	1044.77	1044.97
248+00		1044.49	1044.39	1044.20	1044.68	1044.80
+25		1044.40	1044.36	1044.17	1044.58	1044.63
+50		1044.30	1044.32	1044.13	1044.48	1044.45
+75		1044.19	1044.27	1044.08	1044.37	1044.28
249+00		1044.07	1044.21	1044.02	1044.25	1044.11
+16.80		1043.98	1044.17	1043.98	1044.17	1043.98
+25		1043.94	1044.13	1043.94	1044.13	1043.94
+50		1043.81	1043.99	1043.81	1043.99	1043.81
+75	30'	1043.66	1043.85	1043.66	1043.85	1043.66

Reloc. Upper Lewisburg Salem Rd.			
Station	Lt. Edge 9' Off P.G.	℄ Profile P.G.	Rt. Edge 9' Off P.G.
43+50	1038.40	1038.54	1038.40
+75	1038.46	1038.60	1038.46
44+00	1038.52	1038.66	1038.52
+25	1038.58	1038.72	1038.58
+27.46	1038.59	1038.73	1038.59
+50	1038.64	1038.78	1038.66
+67.46	1038.69	1038.83	1038.73
+75	1038.70	1038.84	1038.77
+83.62	1038.72	1038.86	1038.80
45+00	1038.76	1038.90	1038.90
+21.70	1038.81	1038.95	1039.03
+23.63	1038.81	1038.96	1039.05
+25	1038.81	1038.96	1039.07
+50	1038.79	1039.02	1039.25
+51.70	1038.77	1039.02	1039.26
+75	1038.72	1039.08	1039.44
46+00	1038.66	1039.14	1039.62
+25	1038.59	1039.20	1039.81
+33.02	1038.57	1039.22	1039.87
+50	1038.55	1039.26	1039.97
+73.02	1038.59	1039.33	1040.07
+75	1038.59	1039.34	1040.08
47+00	1038.70	1039.45	1040.20
+25	1038.85	1039.60	1040.35
+50	1039.04	1039.79	1040.53
+75	1039.26	1040.01	1040.76
48+00	1039.52	1040.27	1041.01
+03.62	1039.56	1040.31	1041.05
+25	1039.81	1040.56	1041.31
+50	1040.14	1040.89	1041.64
+61.57	1040.30	1041.05	1041.79
49+00	1040.84	1041.58	1042.31
+50	1041.53	1042.28	1043.03
+92.17	1042.12	1042.85	1043.61
50+00	1042.25	1042.98	1043.72
+25	1042.67	1043.32	1044.00
+32.17	1042.80	1043.41	1044.08
+50	1043.11	1043.67	1044.25
+75	1043.59	1044.02	1044.49
51+00	1044.08	1044.37	1044.73
+13.49	1044.31	1044.56	1044.86
+25	1044.52	1044.71	1044.98
+41.57	1044.78	1044.94	1045.15
+50	1044.92	1045.06	1045.23
+53.49	1044.96	1045.10	1045.26
+75	1045.27	1045.41	1045.48
+81.57	1045.35	1045.50	1045.55
+97.73	1045.57	1045.73	1045.73
52+00	1045.62	1045.76	1045.74
+17.73	1045.86	1046.00	1045.93

S.R. 311 Ramp "A"					
Station	Left Edge	Profile Grade	Station	Left Edge	Profile Grade
1+28.72	1041.27	1041.52	11+50	1040.95	1040.18
1+48.02	1040.99	1041.37	+75	1041.67	1041.06
+50	1040.97	1041.36	12+00	1042.39	1041.92
+75	1040.64	1041.14	+21.27	1043.00	1042.65
+88.02	1040.50	1041.02	+25	1043.10	1042.76
2+00	1040.38	1040.89	+50	1043.84	1043.58
+25	1040.10	1040.62	+61.27	1044.19	1043.96
+50	1039.80	1040.31	+75	1044.64	1044.39
+75	1039.47	1039.98	13+00	1045.43	1045.18
3+00	1039.11	1039.62	+25	1046.20	1045.96
+00.60	1039.10	1039.60	+50	1046.96	1046.72
+25	1038.78	1039.24	+75	1047.69	1047.46
+40.60	1038.63	1039.00	14+00	1048.42	1048.18
+50	1038.55	1038.87	+25	1049.12	1048.89
+75	1038.34	1038.49	+50	1049.81	1049.58
4+00	1038.14	1038.12	+75	1050.48	1050.25
+14.90	1038.02	1037.88	15+00	1051.14	1050.91
+25	1037.92	1037.74	+25	1051.77	1051.55
+50	1037.62	1037.37	+41.27	1052.18	1051.96
+54.90	1037.55	1037.28			
+98.17	1036.90	1036.63			
5+00	1036.87	1036.62			
+25	1036.54	1036.24			
+38.17	1036.40	1036.03			
+50	1036.28	1035.87			
+75	1036.03	1035.49			
6+00	1035.78	1035.12			
+25	1035.53	1034.74			
+50	1035.28	1034.37			
+75	1035.03	1033.99			
7+00	1034.78	1033.62			
+13.75	1034.65	1033.41			
+13.77	1034.65	1033.41			
+25	1034.53	1033.25			
+50	1034.29	1032.96			
+53.77	1032.93	1034.25			
+75	1034.10	1032.77			
8+00	1033.99	1032.66			
+25	1033.97	1032.64			
+50	1034.05	1032.72			
+75	1034.22	1032.89			
9+00	1034.48	1033.15			
+25	1034.82	1033.50			
+50	1035.26	1033.94			
+75	1035.80	1034.47			
10+00	1036.42	1035.09			
+05.93	1036.49	1035.17			
+25	1037.11	1035.80			
+41.27	1037.55	1036.32			
+45.93	1037.69	1036.46			
+50	1037.81	1036.61			
+63.75	1038.22	1037.09			
+75	1038.58	1037.49			
11+00	1039.12	1038.39			
+25	1040.21	1039.29			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
MOT. 40-2.73

SUPERELEVATION TABLES

S.R. 311 RAMP "B"

Station	Left Edge	Profile Grade
7+99.06	1055.96	1055.65
8+00.00	1055.94	1055.22
+19.06	1055.59	1055.22
+25.00	1055.48	1055.06
+50.00	1055.00	1054.46
+75.00	1054.48	1053.83
9+00.00	1053.92	1053.16
+25.00	1053.34	1052.46
+50.00	1052.74	1051.73
+75.00	1052.10	1050.97
+94.66	1051.58	1050.34
+99.06	1051.46	1050.21
10+00.00	1051.43	1050.18
+25.00	1050.69	1049.35
+34.66	1050.37	1049.00
+50.00	1049.81	1048.49
11+00.00	1048.07	1046.74
+50.00	1046.32	1044.99
12+00.00	1044.57	1043.24
+35.87	1043.29	1041.96
+50.00	1042.80	1041.49
+54.99	1042.62	1041.32
+75.00	1041.89	1040.65
+75.87	1041.86	1040.62
13+00.00	1041.01	1039.91
+25.00	1040.15	1039.28
+50.00	1039.38	1038.75
+75.00	1038.80	1038.33
+97.57	1038.40	1038.04
14+00.00	1038.38	1038.02
+25.00	1038.07	1037.81
+37.57	1037.98	1037.74
+50.00	1037.95	1037.70
+75.00	1037.95	1037.70
15+00.00	1038.06	1037.81
+25.00	1038.27	1038.02
+50.00	1038.58	1038.33
+52.11	1038.60	1038.37

S.R. 311 RAMP "C"

Station	Left Edge	Profile Grade
7+99.06	1030.28	1029.97
8+00.00	1030.28	1029.96
+19.06	1030.25	1029.85
+25.00	1030.24	1029.82
+50.00	1030.21	1029.68
+75.00	1030.18	1029.53
9+00.00	1030.14	1029.39
+10.34	1030.13	1029.33
+25.00	1030.13	1029.25
+50.00	1030.17	1029.17
+75.00	1030.27	1029.14
+94.66	1030.35	1029.15
10+00.00	1030.38	1029.16
+25.00	1030.53	1029.25
+34.66	1030.59	1029.29
+49.06	1030.70	1029.37
+50.00	1030.72	1029.39
+75.00	1030.91	1029.58
11+00.00	1031.16	1029.84
+25.00	1031.47	1030.14
+50.00	1031.83	1030.51
+75.00	1032.25	1030.92
12+00.00	1032.73	1031.40
+25.00	1033.26	1031.93
+50.00	1033.85	1032.52
+65.56	1034.24	1032.92
+75.00	1034.48	1033.16
13+00.00	1035.09	1033.86
+05.56	1035.14	1033.95
+10.34	1035.31	1034.17
+25.00	1035.67	1034.60
+50.00	1036.25	1035.36
+75.00	1036.84	1036.10
14+00.00	1037.42	1036.86
+25.00	1038.00	1037.60
+27.26	1038.07	1037.68
+50.00	1038.61	1038.33
+67.26	1039.06	1038.81
+75.00	1039.26	1039.02
15+00.00	1039.90	1039.65
+25.00	1040.50	1040.24
+50.00	1041.04	1040.79
+59.64	1041.14	1040.99

S.R. 311 RAMP "D"

Station	Left Edge	Profile Grade	Station	Left Edge	Profile Grade
1+28.72	1038.79	1039.06	11+75.00	1027.66	1026.59
+48.08	1038.50	1038.89	12+00.00	1027.75	1026.84
+50.00	1038.48	1038.87	+15.00	1027.83	1027.00
+75.00	1038.07	1038.54	+25.00	1027.88	1027.11
+88.08	1037.84	1038.33	+50.00	1028.00	1027.38
2+00.00	1037.60	1038.12	+75.00	1028.13	1027.62
+25.00	1037.08	1037.59	+96.96	1028.24	1027.81
+50.00	1036.45	1036.97	13+00.00	1028.26	1027.85
+75.00	1035.73	1036.24	+25.00	1028.40	1028.05
3+00.00	1034.90	1035.42	+36.96	1028.46	1028.14
+35.03	1033.69	1034.18	+50.00	1028.53	1028.24
+50.00	1033.17	1033.67	+75.00	1028.66	1028.41
+75.00	1032.41	1032.79	14+00.00	1028.81	1028.56
+75.03	1032.41	1032.79	+15.00	1028.88	1028.64
4+00.00	1031.70	1031.92	+50.00	1029.07	1028.83
+25.00	1031.00	1031.04	15+00.00	1029.32	1029.09
+49.33	1030.30	1030.20	+50.00	1029.58	1029.35
+50.00	1030.29	1030.17	16+00.00	1029.83	1029.61
+58.53	1030.12	1029.87	+50.00	1030.09	1029.87
+75.00	1029.54	1029.31	+51.36	1030.09	1029.87
+89.32	1029.09	1028.86			
5+00.00	1028.77	1028.52			
+25.00	1028.07	1027.82			
+50.00	1027.44	1027.19			
+75.00	1026.89	1026.64			
6+00.00	1026.42	1026.17			
+25.00	1026.02	1025.77			
+50.00	1025.71	1025.46			
+50.33	1025.70	1025.45			
+75.00	1025.51	1025.22			
+90.33	1025.47	1025.11			
7+00.00	1025.46	1025.06			
+25.00	1025.50	1024.98			
+50.00	1025.62	1024.98			
+58.53	1025.69	1024.99			
+75.00	1025.64	1024.98			
8+00.00	1025.99	1025.10			
+25.00	1026.18	1025.16			
+50.00	1026.37	1025.22			
+65.95	1026.49	1025.25			
+75.00	1026.55	1025.28			
9+00.00	1026.67	1025.35			
+05.95	1026.68	1025.35			
+50.00	1026.80	1025.47			
10+00.00	1026.92	1025.60			
+15.00	1026.96	1025.63			
+25.00	1026.99	1025.66			
+50.00	1027.08	1025.75			
+75.00	1027.19	1025.86			
+81.36	1027.21	1025.89			
11+00.00	1027.31	1026.00			
+01.36	1027.31	1026.01			
+21.36	1027.38	1026.15			
+25.00	1027.38	1026.17			
+50.00	1027.59	1026.37			

BROOKVILLE - SALEM ROAD

Station	Lt. Edge 12'Off P.G.	℄ Profile Grade	Rt. Edge 12'Off P.G.
55+94.25	1002.53	1002.71	1002.53
56+00.00	1002.51	1002.70	1002.51
+25.00	1002.38	1002.56	1002.41
+34.25	1002.32	1002.52	1002.38
+50.00	1002.30	1002.49	1002.39
+69.05	1002.28	1002.46	1002.40
+75.00	1002.28	1002.47	1002.44
57+00.00	1002.33	1002.52	1002.57
+06.45	1002.34	1002.54	1002.63
+09.05	1002.35	1002.55	1002.65
+25.00	1002.42	1002.63	1002.80
+46.45	1002.47	1002.75	1003.05
+50.00	1002.49	1002.79	1003.10
+67.45	1002.56	1002.94	1003.33
+75.00	1002.60	1003.02	1003.45
58+00.00	1002.82	1003.31	1003.80
+07.45	1002.91	1003.39	1003.90
+25.00	1003.17	1003.66	1004.15
+39.05	1003.40	1003.89	1004.38
+50.00	1003.58	1004.07	1004.57
+75.00	1004.05	1004.55	1005.04
59+00.00	1004.59	1005.08	1005.57
+25.00	1005.18	1005.68	1006.17
+50.00	1005.81	1006.30	1006.79
60+00.00	1007.06	1007.55	1008.04
+25.00	1007.66	1008.16	1008.65
+50.00	1008.23	1008.72	1009.21
+75.00	1008.76	1009.25	1009.74
61+00.00	1009.25	1009.74	1010.23
+10.61	1009.45	1009.94	1010.43
+25.00	1009.70	1010.19	1010.68

BROOKVILLE SALEM ROAD

Station	Lt. Edge 12'Off P.G.	℄ Profile Grade	Rt. Edge 12'Off P.G.
61+42.21	1009.99	1010.48	1010.97
+50.00	1010.12	1010.60	1011.09
+75.00	1010.55	1010.98	1011.38
+82.21	1010.68	1011.07	1011.45
62+00.00	1011.01	1011.31	1011.62
+03.21	1011.07	1011.35	1011.63
+25.00	1011.40	1011.61	1011.79
+40.61	1011.59	1011.78	1011.87
+43.21	1011.61	1011.80	1011.89
+50.00	1011.68	1011.87	1011.92
+75.00	1011.90	1012.09	1012.05
+80.61	1011.95	1012.14	1012.08
63+00.00	1012.08	1012.27	1012.17
+15.41	1012.17	1012.36	1012.23
+25.00	1012.22	1012.41	1012.25
+50.00	1012.33	1012.51	1012.33
+55.41	1012.34	1012.53	1012.34
+75.00	1012.39	1012.58	1012.39
64+00.00	1012.42	1012.60	1012.42
+25.00	1012.40	1012.59	1012.41
+50.00	1012.35	1012.54	1012.35

S.R. 49 RAMP "A"

Station	Left Edge	Profile Grade
1+28.72	1001.63	1001.88
+48.02	1001.32	1001.70
+50.00	1001.28	1001.68
+75.00	1000.88	1001.37
+88.02	1000.65	1001.18
2+00.00	1000.49	1001.00
+25.00	1000.05	1000.56
+50.00	999.54	1000.05
+75.00	998.96	999.47
3+00.00	998.31	998.82
+25.00	997.60	998.11
+35.58	996.72	997.19
+50.00	996.87	997.36
+75.00	996.23	996.61
+75.58	996.21	996.59
4+00.00	995.65	995.86
+25.00	995.10	995.15
+49.88	994.64	994.52
+50.00	994.63	994.52
+75.00	994.19	993.96
+89.88	993.91	993.67
5+00.00	993.74	993.48
+25.00	993.34	993.09
+50.00	993.02	992.77
+75.00	992.77	992.52
6+00.00	992.61	992.36
+26.23	992.47	992.23
+50.00	992.40	992.11
+66.23	992.38	992.04
+75.00	992.38	991.98

S.R. 49 RAMP "A"

Station	Left Edge	Profile Grade
7+00.00	992.38	991.86
+25.00	992.38	991.74
+50.00	992.38	991.61
+54.10	992.38	991.59
+75.00	992.40	991.51
8+00.00	992.49	991.47
+25.00	992.64	991.50
+41.83	992.77	991.55
+50.00	992.86	991.59
+75.00	993.11	991.75
+81.83	993.20	991.80
9+00.00	993.42	991.98
+25.00	993.71	992.27
+50.00	994.01	992.63
+54.10	994.06	992.69
+55.05	994.07	992.70
+75.05	994.33	993.03
+95.05	994.55	993.34
10+00.00	994.63	993.42
+25.00	994.90	993.82
+50.00	995.28	994.22
+75.00	995.53	994.62
+93.00	995.71	994.91
11+00.00	995.78	995.02
+10.65	996.51	996.06
+50.00	996.30	995.78
+75.00	996.56	996.13
12+00.00	996.82	996.46
+10.65	996.92	996.59
+25.00	997.07	996.78
+50.00	997.32	997.07
+75.00	997.60	997.35
+93.00	997.78	997.54
13+00.00	997.86	997.61
+50.00	998.37	998.13
14+00.00	998.88	998.64
+50.00	999.39	999.16
15+00.00	999.90	999.67
+25.05	1000.15	999.93

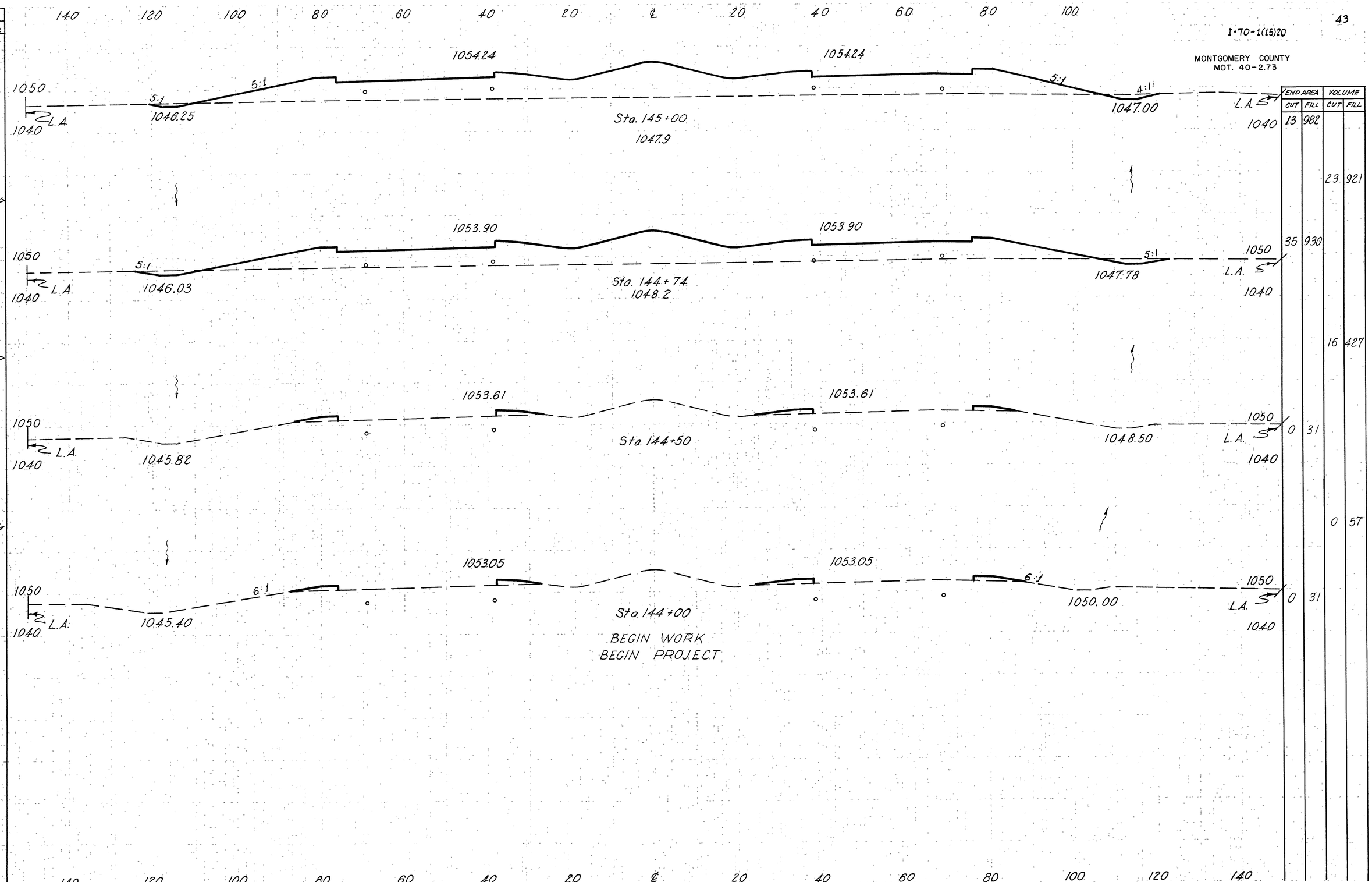
S.R. 49 RAMP "B"

Station	Left Edge	Profile Grade
7+99.06	1001.54	1001.23
8+00.00	1001.53	1001.22
+19.06	1001.50	1001.11
+25.00	1001.49	1001.07
+50.00	1001.46	1000.92
+75.00	1001.42	1000.77
9+00.00	1001.38	1000.62
+25.00	1001.35	1000.47
+50.00	1001.32	1000.32
+75.00	1001.30	1000.17
+94.66	1001.28	1000.05
+99.06	1001.28	1000.03
10+00.00	1001.27	1000.02
+25.00	1001.19	999.87
+34.66	1001.14	999.82
+50.00	1001.05	999.72
11+00.00	1000.75	999.42
+50.00	1000.45	999.12
+98.46	1000.16	998.83
12+00.00	1000.15	998.82
+50.00	999.99	998.66
13+00.00	1000.10	998.78
+24.88	1000.22	998.93
+25.00	1000.22	998.94
+50.00	1000.38	999.16
+64.88	1000.49	999.33
+75.00	1000.57	999.45
+98.46	1000.76	999.79
14+00.00	1000.77	999.81
+25.00	1001.00	1000.20
+50.00	1001.22	1000.59
+75.00	1001.44	1000.98
+86.58	1001.55	1001.17
15+00.00	1001.68	1001.37
+06.59	1001.76	1001.48

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ YDS.	CUT	FILL	CUT	FILL
224	647	13	982	23	921
224	597	35	930	16	427
224	244	0	31	0	57
244		0	31		



Sta. 144+00 to Sta. 145+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
240	2522
214	2356
210	2411
224	2489

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		393	9804
26	2628		
		1135	8339
47	1875		
		1221	6398
73	1480		
		219	4156
45	1196		
		107	4033

C = 47 F = 1875

Sta. 149+00 Right
10465

1060.79
1060
1050
1040
2:1
2:1
℄ L/A
1043.00
20 40 60 80 100 120 140 160 180 200 220 240 260 280

1060.79
1060
1050
1040
2:1
4:1 3:1
℄ L/A
1045.00
280 260 240 220 200 180 160 140 120 100 80 60 40 20
Sta. 149+00 Left

1059.10
1059.10
1050
1040
3:1
4:1
℄ L/A
1046.20
Sta. 148+00
1048.6
3:1
1046.5
1044.00
L/A 156' Rt.

Class I-3 Outlet (Method 'B')
℄ 1053.06
Std. Nº 8 C.B.'s 19' Lt. & Rt.
Sta. 147+00 ℄ Grates 1025.27
℄ Lt. C.B. 1052.56
℄ Rt. C.B. 1051.72
Class I-3 Outlet (Method 'C')
℄ 1052.47
Class I-3 Outlet (Method 'C')
℄ 1049.00
1057.35
1057.35
1051.97
1.53%
2.86%
℄ 1049.03
Dumped Rock Channel Protection 18'×2'-8"×18"
1050
1040
4:1
℄ L/A
1047.50
12"×38' Pipe Class E-1
Sta. 147+00
1048.8
15"×94' Pipe Class A-1
Sec M-6.6(a) or M-6.8(b)
Std. Type 'E' Headwall
4:1
1045.00
L/A 152' Rt.

1055.67
1055.67
1050
1040
4:1
4:1
℄ L/A
1047.10
Sta. 146+00
1048.2
4:1
1046.00
L/A

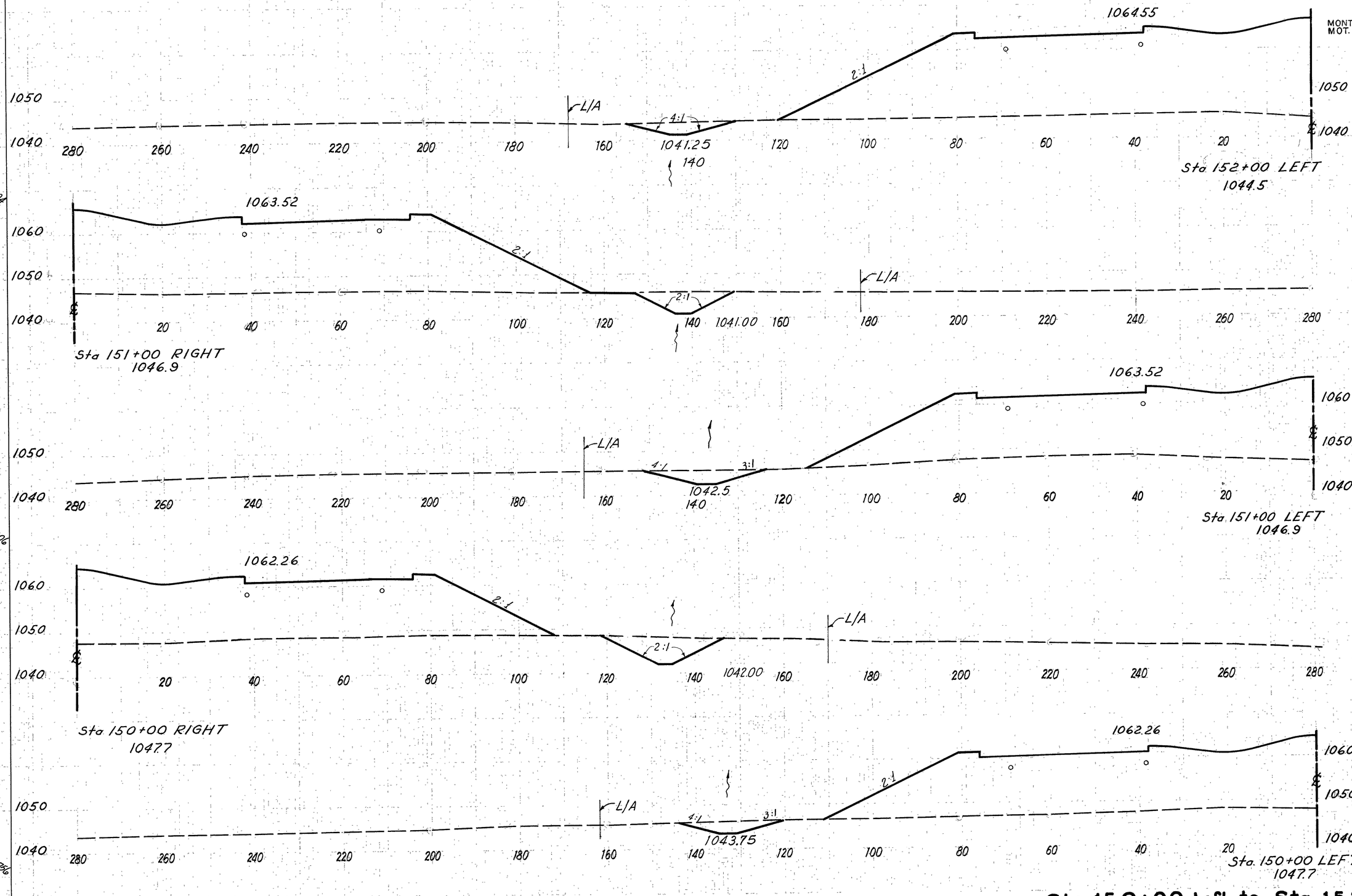
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 146+00 to Sta. 149+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-273

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
	2994				4/1
					1/3 2/2
				156	3145
	267				
	2906				603 1071
					186 2666
	2756				

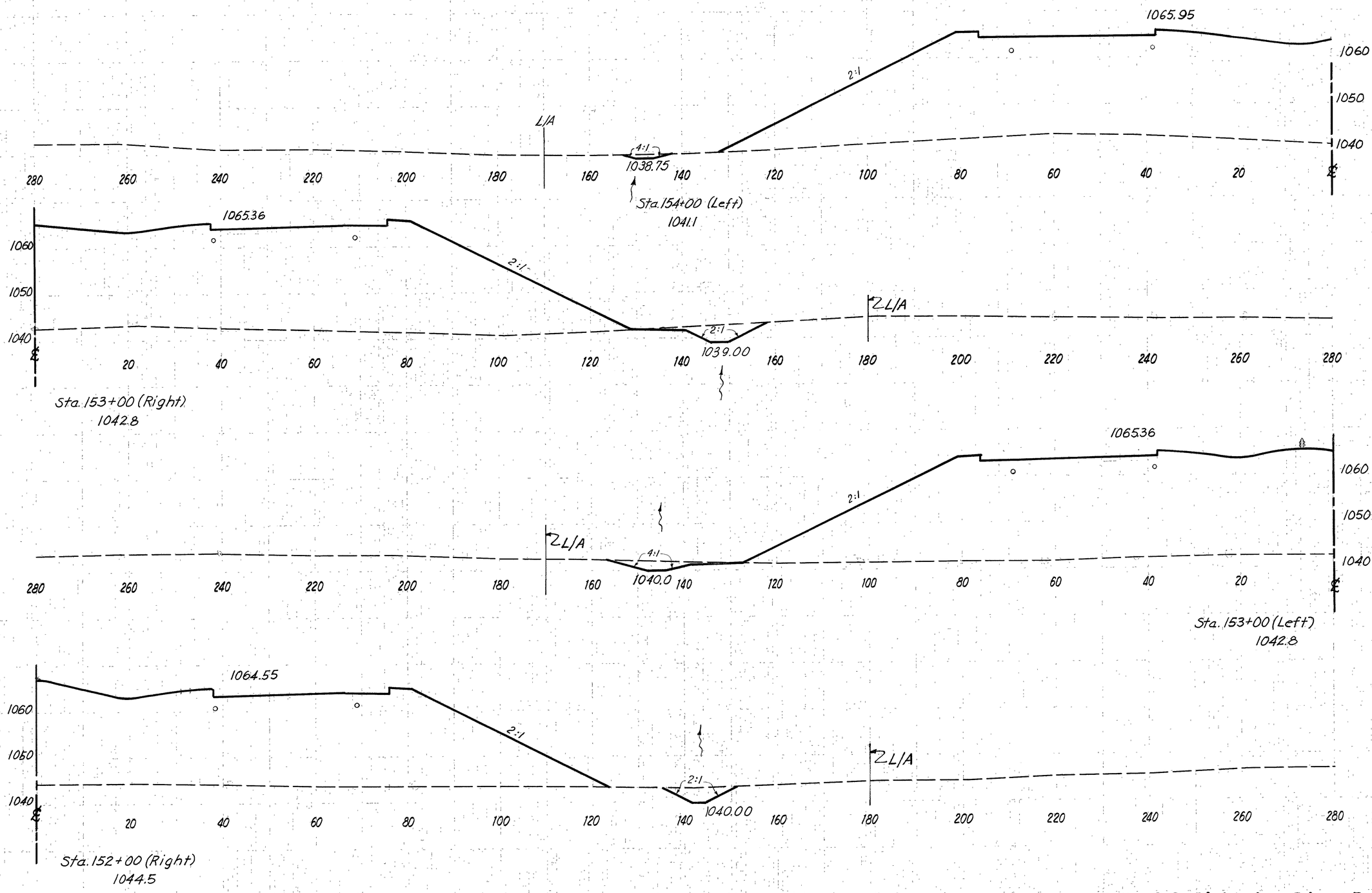


Sta. 150+00 Left to Sta. 152+00 Left

I-70-1(15)20

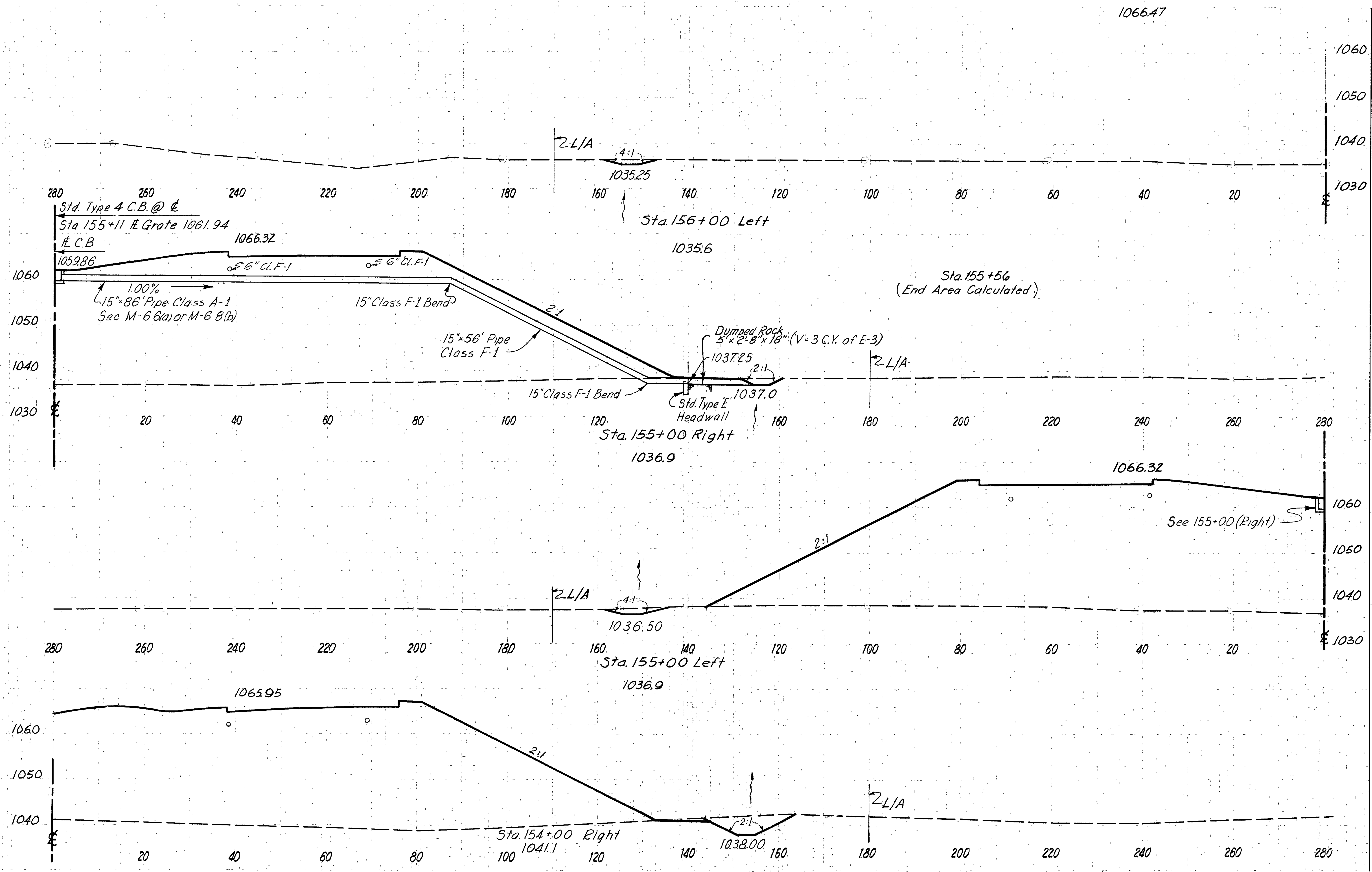
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
SHD WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
	3000				
				2,59	17,827
	3037			4385	
				27,2	15,518
				3995	



Sta. 152+00 Right to Sta. 154+00 Left

SEEDING	
END WIDTH	SQ. YDS.
274	
	5022
266	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		30	6306
22	6305		
		46	12793
22	6030		
		150	20873
59	5242		

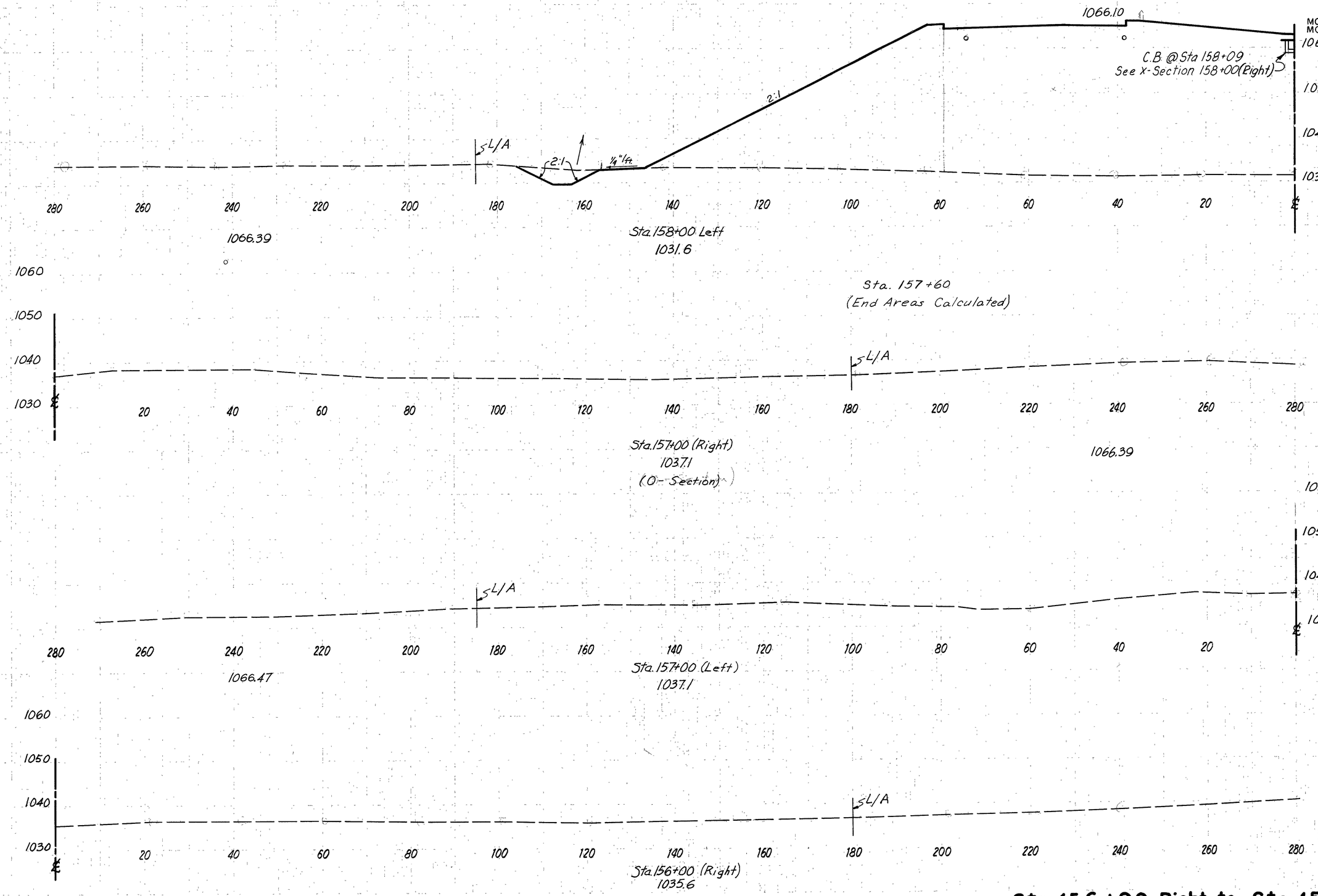
Sta 154+00 Right to Sta 156+00 Left

I-70-1(15)20

MONTGMERY COUNTY
MOT. 40-2.73

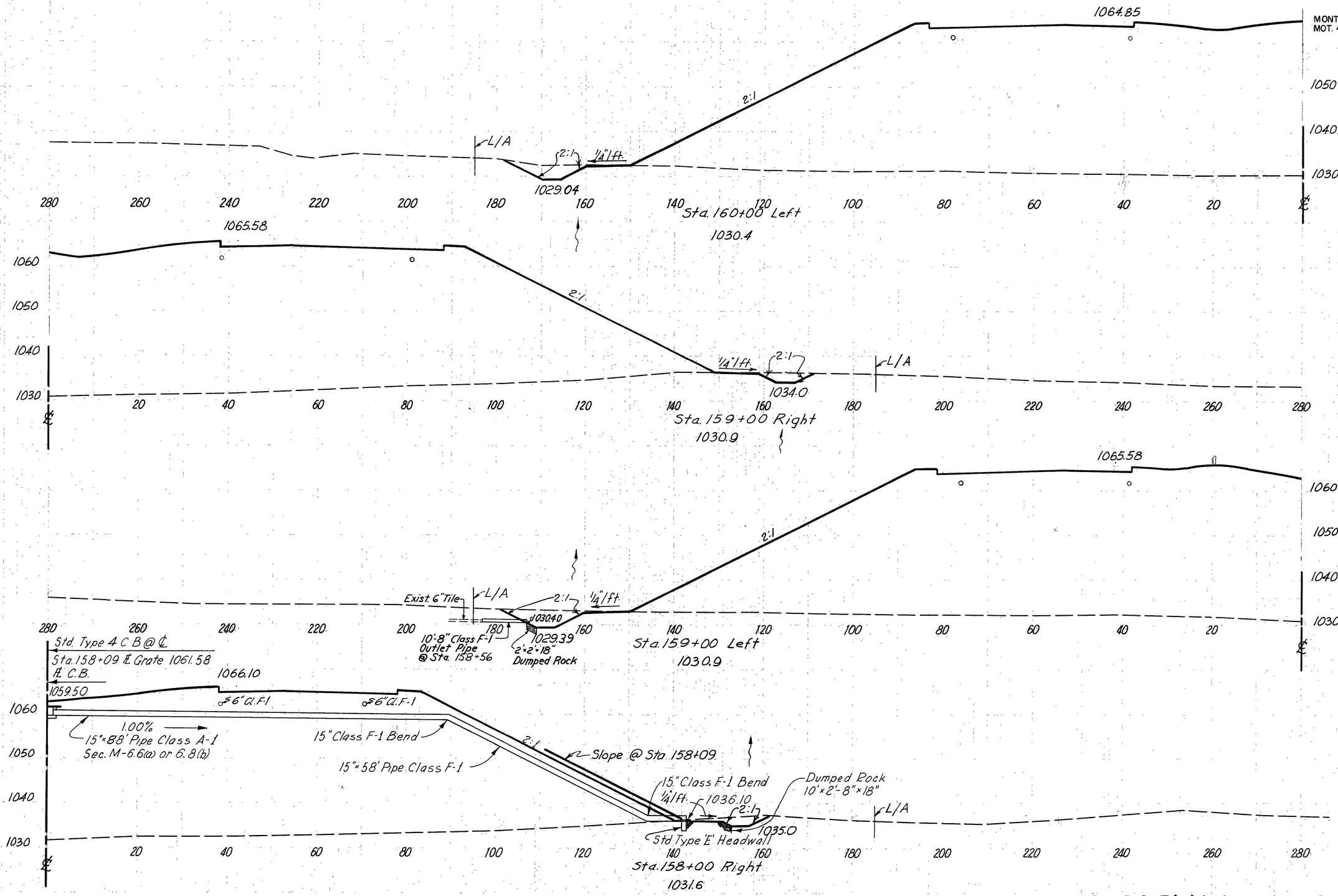
SEEDING	
END WIDTH	SQ. YDS.
	1837
	275

END AREA		VOLUME	
CUT	FILL	CUT	FILL
25	71/47	28	79/42
0	0		
		8	0



Sta. 156+00 Right to Sta. 158+00 Left

SEEDING	
END WIDTH	SQ. YDS.
	2839
	257
	276
	2961



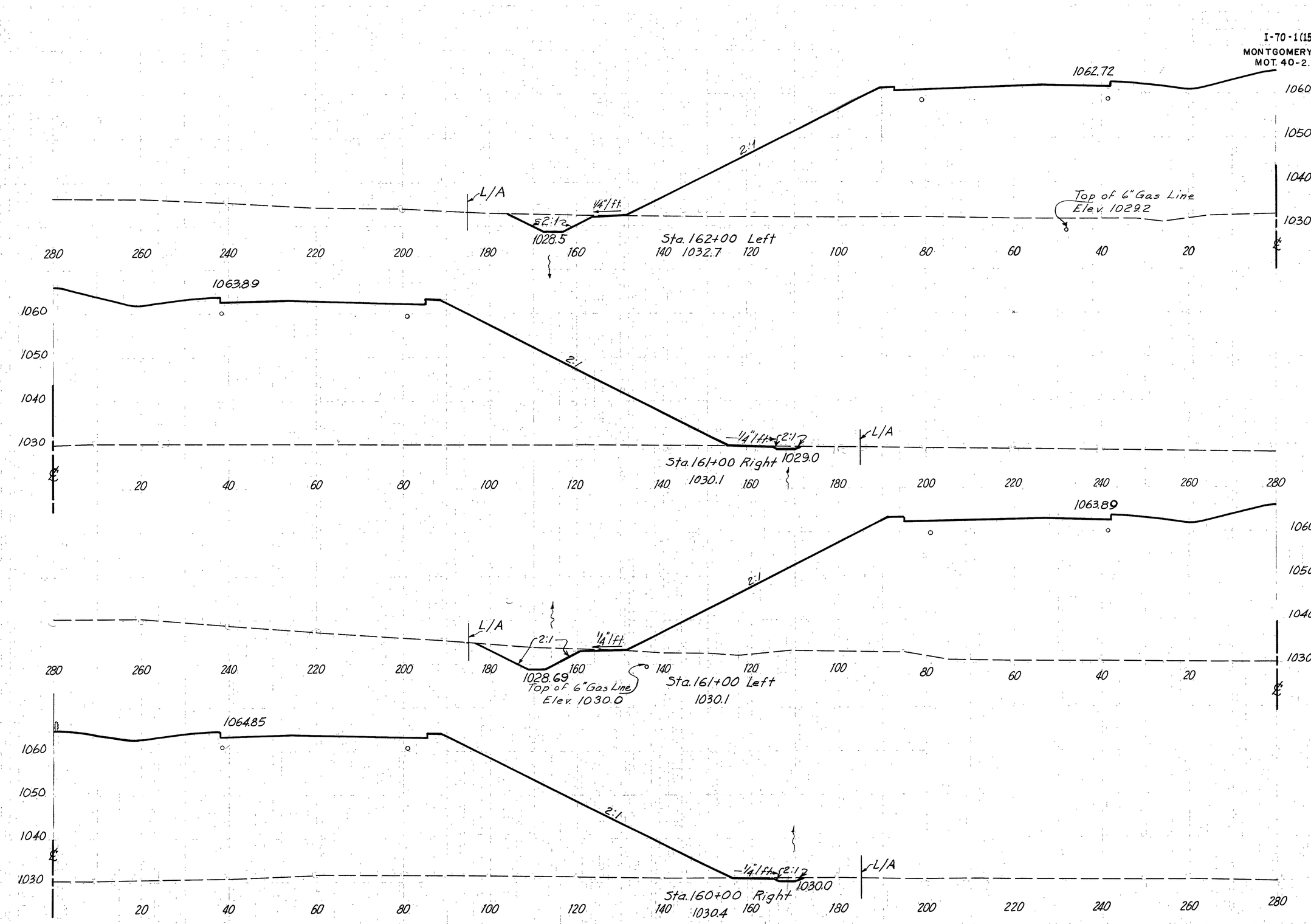
END AREA		VOLUME	
CUT	FILL	CUT	FILL
			185 / 2071/53
60	773		
			222 / 2891/68
51	743.4		
56			1080.2

Sta. 158+00 Right to Sta. 160+00 Left

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
	2900
262	
	2917
263	

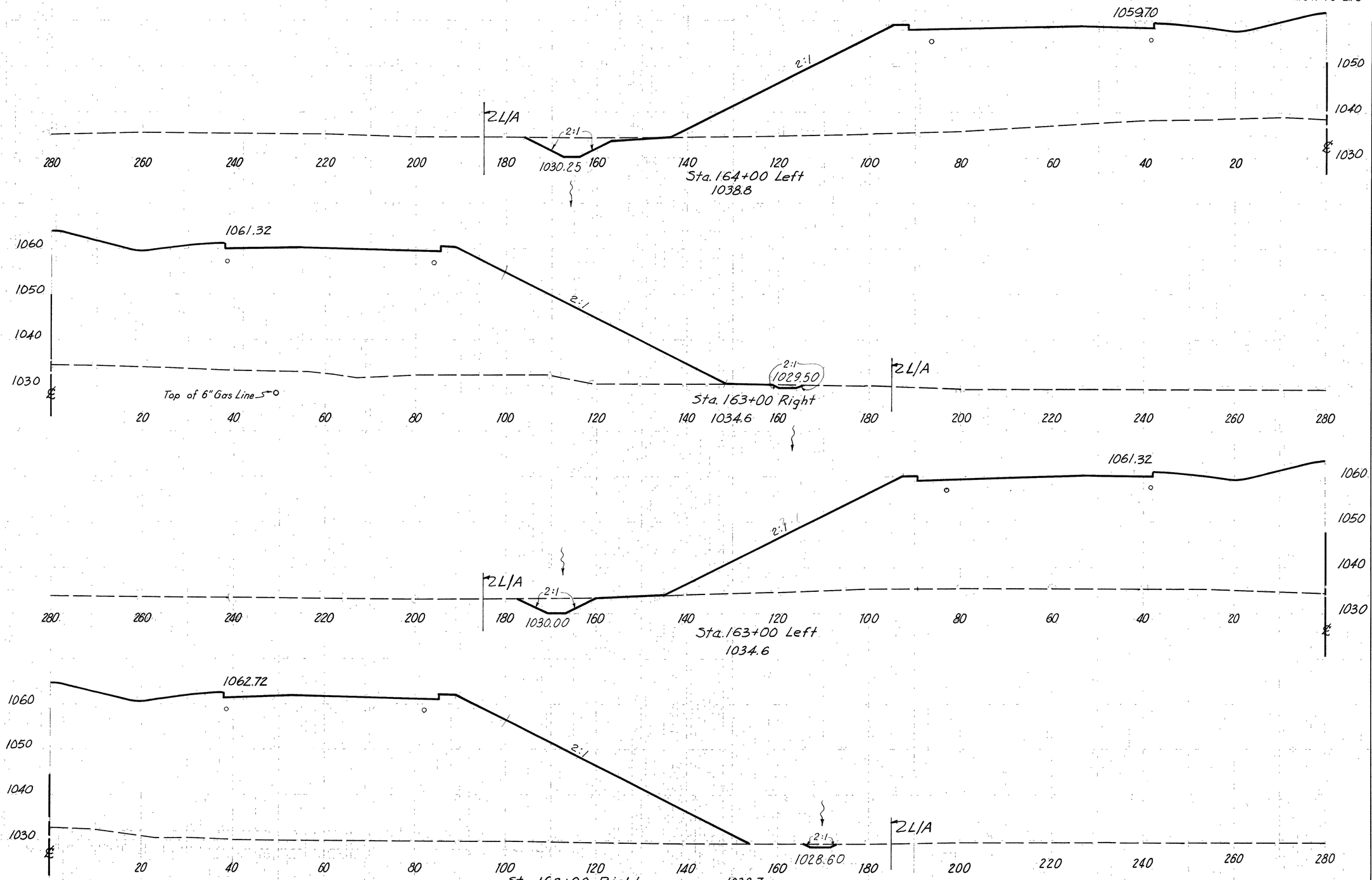
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		233	18606
74	7894		
211		10455	
40		7966	



Sta. 160+00 Right to Sta. 162+00 Left

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
	2778
	2554
	2856
	2602

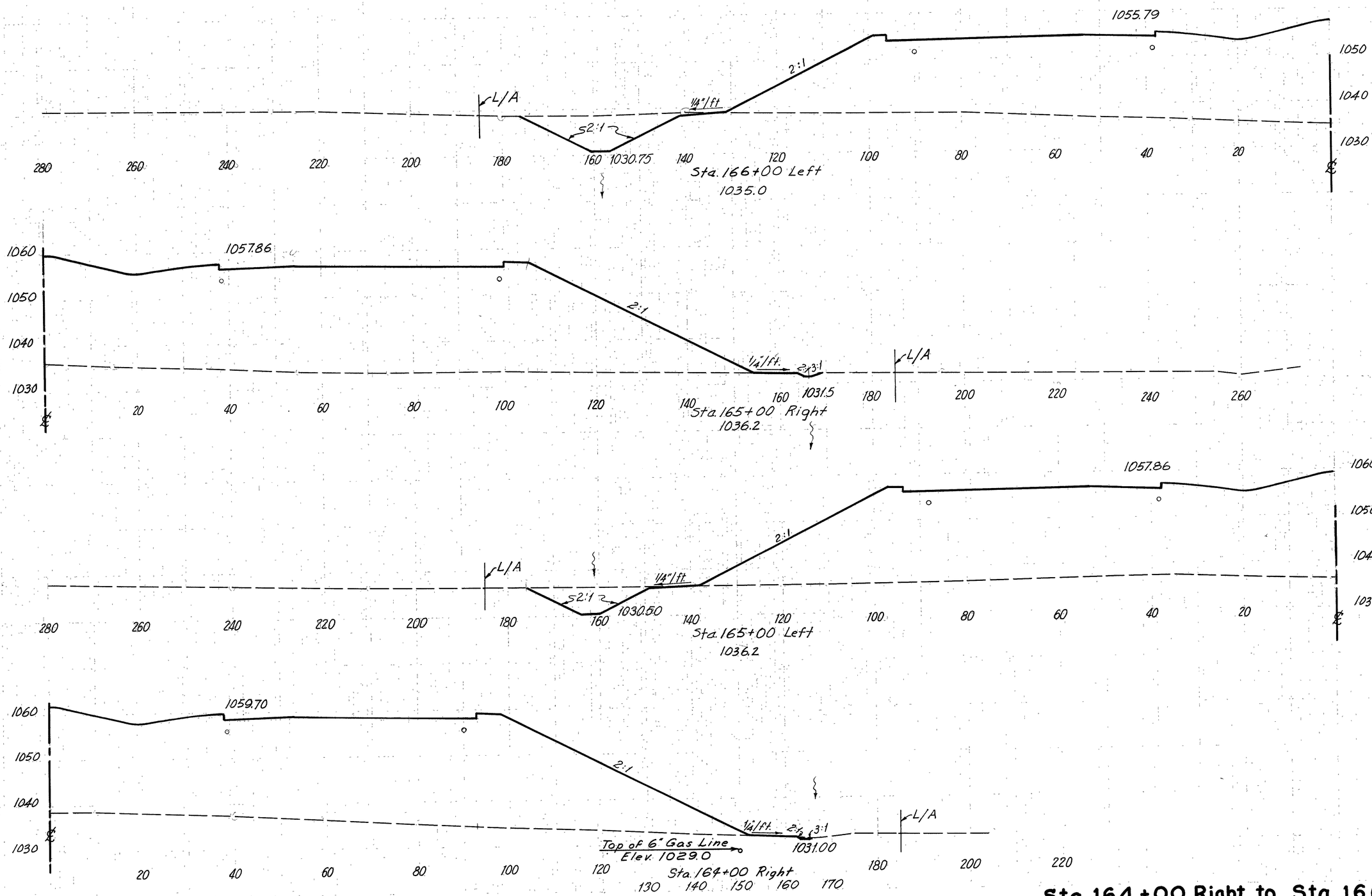


END AREA		VOLUME	
CUT	FILL	CUT	FILL
	38	630	
		163	2186
	52	750	
		167	2516

Sta. 162+00 Right to Sta. 164+00 Left

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
	2544
	2672
	2346

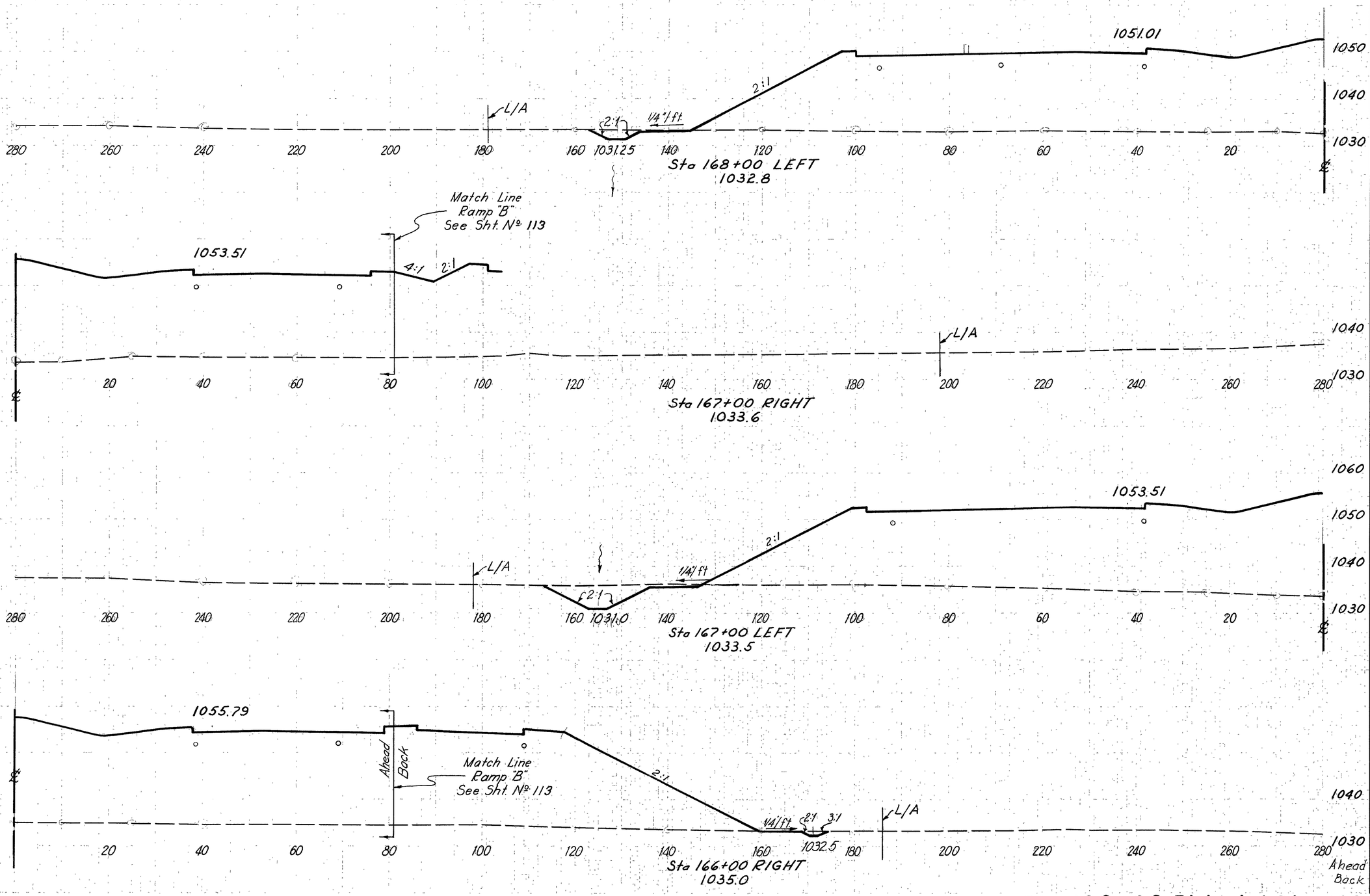


END AREA		VOLUME	
CUT	FILL	CUT	FILL
			478
			1889
	98		5346
		210	20098
	50		5507

Sta. 164+00 Right to Sta. 166+00 Left

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
248	
261.7	
261.7	
223	

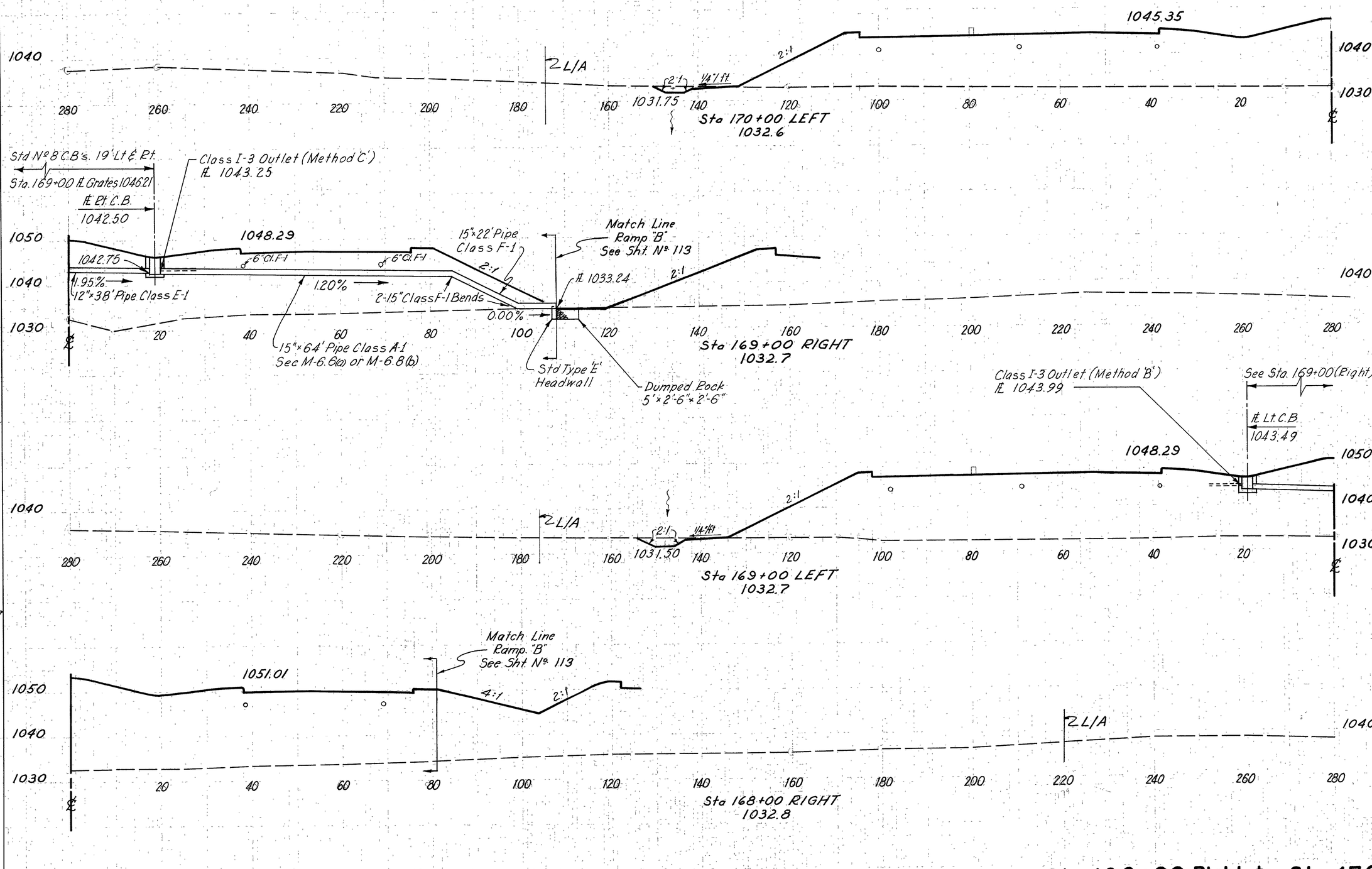


END AREA		VOLUME	
CUT	FILL	CUT	FILL
		169	12811
		76	3511
		433	13339
Ahead		158	3692
Back		162	4858

Sta 166+00 Right to Sta 168+00 Left

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
	2599
	179
	2383
	250



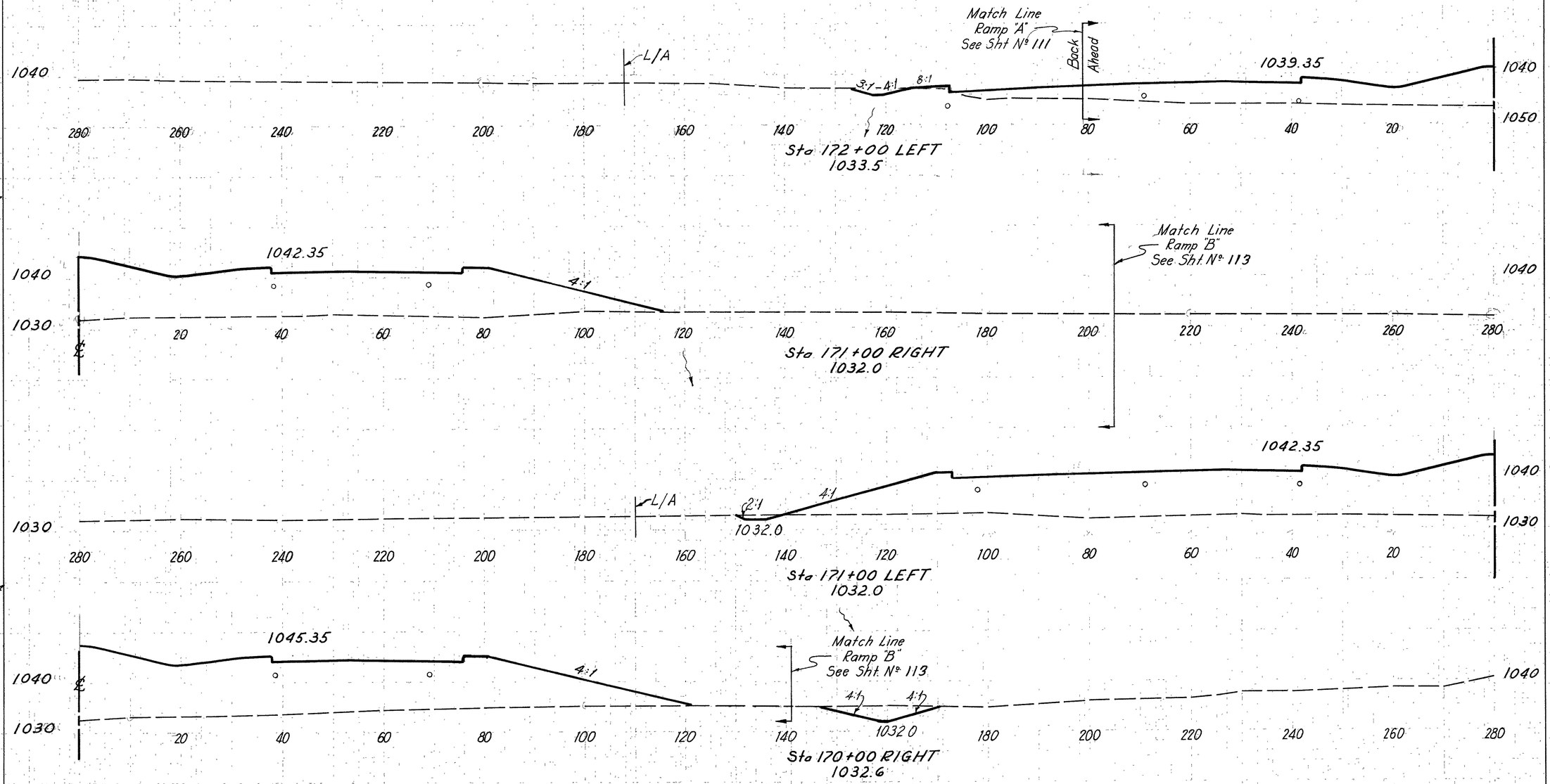
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		44	1034
		15	3153
		56	1248
		15	3407

Sta. 168+00 Right to Sta. 170+00 Left

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
	2144
	198
	2694
	287

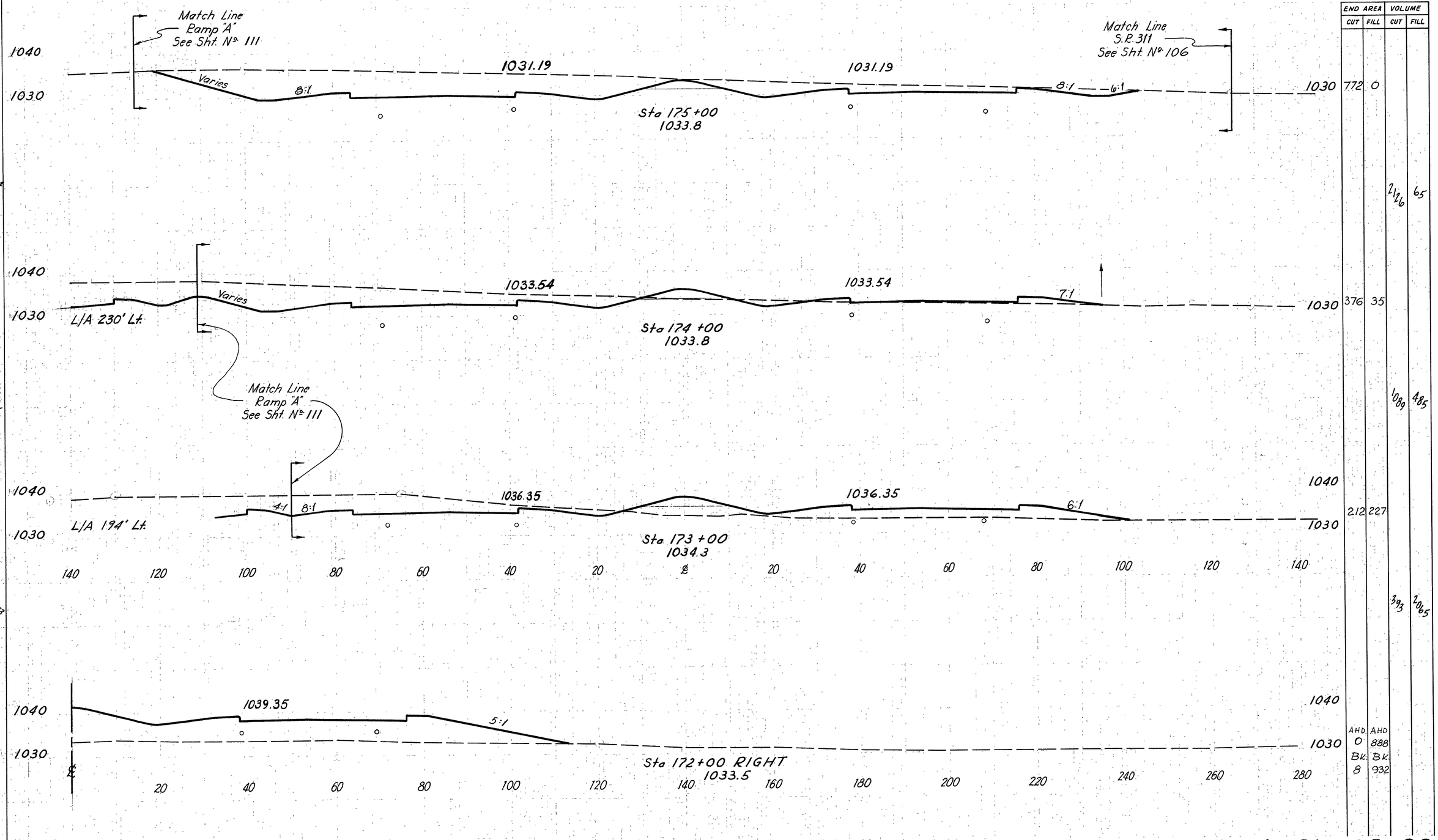
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		18	5454
		7	2013
		30	8433
		9	2541



Sta 170+00 Right to Sta 172+00 Left

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
149	2094	772	0	2126	65
228	2356	376	35	1089	485
193	2133	212	227	393	2065
188		AHD. Bk. 8	AHD. Bk. 932		



Sta. 172+00 Right to Sta. 175+00

I-70-1(15)20

MONTGOMERY COUNTY

MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
124	1378
124	1422
132	1611
158	1706

END AREA		VOLUME	
CUT	FILL	CUT	FILL
263	46		
		2182	89
915	2		
		3133	15
777	6		
		2915	11
797			
		1906	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Std No 8 C.B. 19' Rt
Sta. 179+15 ℄ Grate 1024.34
℄ C.B. 1021.69

Match Line Ramp "D" See Sht. No 120

Bridge Slope

1030 / 1020

6:1 8:1 1026.45 1026.45 8:1 Varies

℄ 12" Pipe 1021.94

Sta 179+00
1026.1

Match Line S.P. 311 See Sht. No 106

Std. No 8 C.B. 19' Lt.
Sta. 178+01 ℄ Grate 1024.91
℄ C.B 1023.02

Bridge Slope

1030 / 1020

1026.94 1026.94

Sta 178+00
1028.6

1040 / 1030 / 1020

Match To Auxiliary Cross Sections S.P. 311 See Sht. No 124

1040

1027.89 1027.89

Sta 177+00
1030.0

1030 / 1020

Varies

Match Line S.P. 311 See Sht. No 106

Bridge Slope

1040 / 1030 / 1020

6:1 8:1 1029.31 1029.31 8:1 6:1

Sta 176+00
1032.8

1030 / 1020

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 176+00 to Sta. 179+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
	219
	2450
	222
	2544
	236
	2589
	230
	2844
	282
	2256

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Match Line Ramp "C" See Sht. No. 116

1030 / 1020

6:1 — 1022.5 — 6:1 — 1028.30

Std. No. 8 C.B. 19' Lt.
Sta. 183+85 ℄ Grate 1026.15
℄ C.B. 1024.32

Sta 184+00 1025.7

1028.30

Back Ahead

4:1 — 3:1

L/A 200' Rt. 1030 / 1020

Match Line Ramp "D" See Sht. No. 120

1030 / 1020

2:1 — 2:1 — 1020.0 Exist 5" Tile

1019.80 — 10"x8" Pipe Class F-1 Outlet @ Sta 184+53

160 180

1030 / 1020

6:1 — 1021.0 — 1027.81

Sta 183+00 1024.4

1027.81

1030 L/A 200' Rt. 1020

Class I-3 Outlet (Method 'D') ℄ 1021.81
Class I-3 Outlet (Method 'C') ℄ 1021.81

Std. No. 4 C.B. @ ℄
Sta. 181+97 ℄ Grate 1023.31
℄ C.B. 1021.06

Class I-3 Outlet (Method "C" ℄ 1022.03)

Std. No. 5 C.B. 97' Rt.
Sta. 181+85 ℄ Grate 1024.00'
℄ 1021.28'

1030 / 1020

5:1 — 1019.5 — 1027.32

Sta 182+00 1022.2

℄ 12" Pipe 1021.31

1027.32

6:1

1030 L/A 200' Rt. 1020

Class I-3 Outlet (Method 'D') ℄ 1019.71
Class I-3 Outlet (Method 'C') ℄ 1019.71

Std. No. 4 C.B. @ ℄
Sta 181+04 ℄ Grate 1022.42
℄ C.B. 1018.94

Match Line Ramp "D" See Sht. No. 120

1030 / 1020

6:1 — 1021.0 — 1026.83

Sta. 181+00 1021.9

1026.83

6:1

1030 L/A 200 Rt. 1020

Match Line Ramp "D" See Sht. No. 120

1030 / 1020

6:1 — 7:1 — 1022.5 — 1026.43

Sta 180+00 1023.5

1026.43

7:1

1030 L/A 270' Rt. Varies 1020

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
15	420		
178	420		
		391	1548
33	416		
		207	2452
79	908		
		185	3043
37	368		
		107	2043
		556	767
21	735		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 180+00 to Sta. 184+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
215	2472
227	2744
267	3244
317	2978
219	2433

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

10'-8" Pipe Class F-1
Outlet @ Sta. 189+16

1030 — 6:1 — 8:1 — 1030.75 — 1030.75 — 2:1 — 2:1 — 6:1 — 3:1
Exist. 5' Tile ℄ 1028.75
←L/A
1020

1030 — 160 — 180 — 1021.80
1020

L/A 200' Rt.

Sta 189+00
1030.7

1030 — 1020 — 1021.30 — 160 — 180

Back

1030 — 6:1 — 8:1 — 1030.26 — 1030.26 — 4:1
L/A 170' Lt.
1020

L/A 200' Rt.
1020

Sta 188+00
1028.4

1030 — 1020 — 1021.05 — 160 — 180

Match Line
Ramp "C"
See Sht. No. 116

1030 — 4:1 — 6:1 — 1029.77 — 1029.77
L/A 192 Lt.
1020

L/A 200 Rt.
1020

Sta 187+00
1027.1

1030 — 1020 — 1020.80 — 160 — 180

1030 — 1029.28 — 1029.28
L/A 252 Lt.
1020
6:1
1025.5

1030
10270
L/A 200' Rt.
1020

Sta 186+00
1026.4

Match Line
Ramp "C"
See Sht. No. 116

Std. No. 8 C.B. 19' Rt.
Sta. 185+12 ℄ Grate 1026.77
℄ C.B.
1024.94

1030 — 1020 — 1020.20 — 2:1 — 2:1 — 160 — 180

1030 — 6:1 — 6:1 — 1028.79 — 1028.79 — 4:1 — 3:1
1024.0
1020

1030
1026.25
L/A 200' Rt.
1020

Sta 185+00
1025.2

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
344	34	90.7	35.0
Back 146	155		
Ahead 200	157	77.8	62.8
193	182	69.1	87.4
180	290	64.6	130.7
169	416	34.1	154.8

Sta 185+00 to Sta 189+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
248	2750
247	2639
228	2589
238	2589
228	2478

END AREA		VOLUME	
CUT	FILL	CUT	FILL
2430		6741	
2235		7981	
2075		6380	
1370		3907	
740		2007	63

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

2 L/A
1040
1030
3:1
8:1
1033.20
1033.20
Sta 194+00
1040.0
1040
1030
1032.71
1032.71
Sta 193+00
1038.5
1040
1030
3:1
1032.22
1032.22
Sta 192+00
1037.0
1040
1030
4:1
1031.73
1031.73
1040
1030
6:1
8:1
1031.24
1031.24
Sta 190+00
1032.8
2 L/A

1040
1030
2:1
L/A 200' Rt.
1024.30
160
180
1040
1030
8:1
3:1
2:1
1023.80
160
180
1040
1030
1023.30
160
180
1040
1030
2:1
2:1
12'×2'-8"×18"
Dumped Rock
℄ 1024.10
1022.80
160
180
18×34' Pipe Class E-1
Std Type 'E'
Headwall
℄ Ditch 1029.48
1040
1030
1020
Class I-3 Outlet (Method 'B')
℄ 1027.18
Std N° 8 C.B's. 19' Lt & Rt
Sta 191+00 ℄ Grates 1029.57
℄ Lt C.B.
1026.68
℄ Rt. C.B.
1025.89
Class I-3 Outlet
(Method 'C')
℄ 1026.64
1026.14
1.42%
12"×38' Pipe Class E-1
Sta 191+00
1035.5
1.50%
15"×92' Pipe Class A-1
Sec. M-6.6(a) or M-6.8(b)
1040
Class I-3 Outlet
Method 'C'
℄ 1025.26
1024.51
0.45%
℄ Rt. Rdwy C.B.
1024.26
Std N° 5 C.B. 110' Rt
Sta. 191+00 ℄ Grate 1029.23
1030
1028.0'
Exist. 5" Tile
2:1
Prop. 10"×8" Pipe Class F-1
Outlet @ Sta. 190+18
L/A 200' Rt.
12'×2'-0"×18"
Dumped Rock
1022.30
160
180
8:1
3:1
1040
1030
1020

Sta 190+00 to Sta 194+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
255	2911
269	2967
265	2894
256	2811
250	2767

END AREA		VOLUME	
CUT	FILL	CUT	FILL
3428		1/4 92	
3318		1/4 94	
3429		1/3 50	
3672		1/4 74	
3064		1/0 74	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Sta. 199+00
1045.9

1050 / L/A / 1040 — 3:1 — 8:1 — 1035.65 — 1035.65

Class I-3 Outlet (Method 'C')
℄ 1029.49

Std No 5 C.B 95' Lt
℄ Grate 1033.58
℄ Lt. Rdwy C.B
1028.24

Class I-3 Outlet (Method 'C')
℄ 1029.07

Std No 8 CBs 19' Lt & Rt.
Sta 198+00 ℄ Grates 1032.99
℄ Lt C.B. 1027.82
℄ Rt C.B. 1027.23

Class I-3 Outlet (Method 'C')
℄ 1028.73

Class I-3 Outlet (Method 'C')
℄ 1028.31

1050 / 1040 — 3:1 — ℄ Ditch 1033.83 — 1035.16 — 1035.16 — ℄ Ditch 1032.46 — Std No 5 C.B. 95' Rt. ℄ Grate 1032.21 — 8'x4'x18" Dumped Rock — ℄ Ditch 1026.27 — ℄ 1026.54 — 1027.48

0.55% → 21"x 76' Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b)

0.90% → 21"x 38' Pipe Class E-1

Sta 198+00
1047.4

0.55% → 24"x 76' Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b)

℄ Rt. Rdwy. C.B. 1026.81

0.70% → 24"x 38' Pipe Class E-1

℄ 1026.76

1040 / 1030 / 160 / 180 / 2:1 / L/A 200' Rt

1040 / 1030 / 160 / 180 / 8:1 / 3:1 / 2:1

Std Type F Headwall

1050 / 1040 — Varies — 1034.67 — 1034.67

Sta 197+00
1044.4

1040 / 1030 / 150 / 170 / 190 / 1040 — 1032.22 — 1025.78

1050 / 1040 — Varies — 1034.18 — 1034.18

Sta 196+00
1046.0

1031.98 — 1025.29

1040 / 1030 / 150 / 170 / 190 / 1040 / L/A 200' Rt.

1050 / 1040 — 5 L/A — 3:1 — 8:1 — 1033.69 — 1033.69

Sta 195+00
1043.1

8:1 — 3:1 — 2:1 — 1024.80

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 195+00 to Sta. 199+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
274	3044
274	3044
274	3044
274	3044
274	2939

END AREA		VOLUME	
CUT	FILL	CUT	FILL
3010		1171 8	
3318		1238 5	
3370		1294 4	
3620		1296 3	
3380		1260 1	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1050 / 1040 — L/A — 3:1 — 8:1 — 1038.10 — Sta 204+00 1047.6 — 1038.10 — 8:1 — 3:1 — 2:1 — 1029.21

1050 / 1040 — 1037.61 — Sta. 203+00 1048.1 — 1037.61 — 1028.72

1050 / 1040 — 1037.12 — Sta 202+00 1047.4 — 1037.12 — 1028.23

1050 / 1040 — 1036.63 — Sta 201+00 1047.1 — 1036.63 — 1027.74

1050 / 1040 — L/A — 3:1 — 8:1 — 1036.14 — Sta 200+00 1046.4 — 1036.14 — 8:1 — 3:1 — 2:1 — 1027.25

L/A 200' Rt. — 2:1 — 1040 / 1030 — 140 160 180

L/A 200' Rt. — 2:1 — 1050 / 1040 — 140 160 180

L/A 200' Rt. — 2:1 — 1050 / 1040 — 140 160 180

℄ 1047.5± Existing 5" Tile Sta. 202+50 — 8"x10' Cl. F.I. Pipe w/ 8"x45° Bend — Dumped Rock 38'x2'x18" — 1050 / 1040 — 140 160 180

L/A 200' Rt. — 2:1 — 1050 / 1040 — 140 160 180

Sta. 200+00 to Sta. 204+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
274	
	2956
258	
	2956
274	
	3044
274	
	3044
274	
	3044

END AREA		VOLUME	
CUT	FILL	CUT	FILL
4162	0		
		148555	
3960	0		
		136613	
		129550	
3491			
		126622	
3502			
		117111	
3314			

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

2 L/A

1050
1040

3:1 8:1

1040.55 Sta 209+00 1051.6 1040.55

8:1 3:1 2:1

1031.66

1050
1040

140 160 180

1050 L/A 200' Rt. 1040 2:1

1050
1040

1040.06 Sta 208+00 1050.8 1040.06

1031.17

Class I-3 Outlet (Method 'B') ℄ 1034.96

Std. No 8 C.B.'s. 19' Lt. & Rt. Sta. 207+00 ℄ Grates 1037.40

Class I-3 Outlet 1040 (Method 'C') ℄ 1034.58

℄ Lt. C.B. 1034.46

℄ Rt. C.B. 1034.00

1039.57 1039.57

1.20% 12"×38' Pipe Class E-1 Sta 207+00 1050.2

2.50% 12"×76' Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b)

1032.10

Class I-3 Outlet (Method 'C') ℄ 1032.60

Std. No 5 C.B. 95' Rt. ℄ Grate 1036.43

℄ Rt. Rdwy C.B. 1031.60

0.90% 18"×38' Pipe Class E-1

Dumped Rock 8'×3'×18" 1031.26

1030.68 Std Type 'E' Headwall

1039.08 Sta 206+00 1050.6 1039.08

1030.19

1038.59 Sta 205+00 1049.1 1038.59

1029.70

Sta. 205+00 to Sta. 209+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
274	3044
274	3044
274	3044
274	3044
274	3044

END AREA		VOLUME	
CUT	FILL	CUT	FILL
3984		14109	
3735		14039	
3846		13981	
3704		13341	
3500		14189	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

L/A

1050
1040
3:1
8:1
1043.00
Sta 214+00
1054.7
1043.00
8:1
3:1
2:1
1034.11

1050
Varies
1042.51
Sta 213+00
1054.4
1042.51
1033.62

1060
1050
1042.02
Sta 212+00
1054.0
1042.02
1033.13

1060
1050
1041.53
Sta 211+00
1051.8
1041.53
1032.64

1060
L/A
1050
Varies
8:1
1041.04
Sta 210+00
1051.3
1041.04
8:1
3:1
2:1
1032.15

50
40
140 160 180
2:1
L/A 200' Rt.

Sta. 210+00 to Sta. 214+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
AVG. WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
256	2889	1324		5585	
264	2872	1692		7383	
253	2928	2295	0	10031	
274	3044	3122		12498	
274	3044	3627		13909	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

L/A 182 Rt.
1050
1040
6:1 8:1 8:1 3:1 2:1 2:1
1045.45 1045.45
Sta 219+00
1049.7
1044

L/A 190' Rt.
1050
1040
4:1 3:1
1044.96 1044.96
Sta 218+00
1050.8
1041

L/A 195' Rt.
1050
1040
3:1 8:1
1044.47 1044.47
Sta 217+00
1051.1
1038

Class I-3 Outlet (Method 'D')
℄ E 1038.37
Std. N° 8 C.B.'s. 19' Lt. & Rt.
Sta. 216+00 ℄ Grates 1041.81 SW
℄ Lt. C.B. 1037.87
℄ Rt. C.B. 1036.69
Class I-3 Outlet (Method 'C')
℄ E 1037.69
1060
1050
1040
1043.98 1043.98
℄ E 1038.79
℄ E 1038.53
1037.19
6"x 40' Pipe Class A-1 Sec M-6.6(b) or M-6.8(b)
6"x 10' Cl. F-1
12"x 38' Pipe Class E-1 1.80%
18"x 76' Pipe Class A-1 Sec. M-6.6(a) or M-6.8(b) 0.45%
Sta 216+00
1053.4
140 160 180

L/A 200' Rt.
1060
1050
1040
Class I-3 Outlet (Method 'C')
℄ E 1037.35
Std N° 5 C.B. 95' Rt.
℄ Grate 1040.84
℄ Ditch 1041.09
Dumped Rock 12"x 3'x 18"
℄ E 1035.91
℄ Rt Pdwy C.B. 1036.35
1.30%
18"x 34' Pipe Class E-1
1035.09
Std Type 'E' Headwall
160 180
2:1 2:1 8:1 3:1 2:1
1043.49 1043.49
Sta 215+00
1054.7
1034.60

L/A 200' Rt.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 215+00 to Sta 219+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
214	2333
206	2378
222	2533
234	2667
246	2789

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1105		5389	
1805		5304	
1059		3448	
803		3141	
903		4124	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 224+00
1053.2
1047.90 1047.90
6:1 8:1 8:1 3:1
L/A
1050
1040

2½ Sty Stucco
Br. Res. ℄
L/A
1060
1050
1040

Sta 223+00
1054.5
1047.41 1047.41
2:1

L/A
1059
1050
1040

Sta 222+00
1050.3
1046.92 1046.92
3:1

L/A 160' Rt
2:1
1050
1050

Sta 221+00
1048.6
1046.43 1046.43

L/A 172' Rt
2:1 2:1
1047
1050
1040

Sta 220+00
1048.5
1045.94 1045.94
6:1 8:1 8:1 3:1

Sta 220+00 to Sta 224+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
224	2489
224	2489
224	2489
224	2489
224	2489
224	2433

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1050 / 1040 — L/A — 2:1 — 1044.3 — 4:1 — ¼"/ft. — 6:1 — 1049.01 — Sta 229+00 — 1047.6 — 1049.01 — 8:1 — ¼"/ft. — 2:1 — 1044.0 — 4:1 — 1050 / 1040 — L/A

1050 / 1040 — 2:1 — 1044.8 — 6:1 — 1049.03 — Sta 228+00 — 1046.1 — 1049.03 — ¼"/ft. — 2:1 — 1044.5 — 4:1 — 1050 / 1040

1050 / 1040 — ¼"/ft. — 8:1 — 4:1 — 1045.3 — 4:1 — 1048.93 — Sta 227+00 — 1047.8 — 1048.93 — 6:1 — 1050 / 1040 — Begin Interceptor Ditch

1050 / 1040 — 6:1 — 1048.71 — Sta 226+00 — 1049.1 — 1048.71 — 6:1 — 1050 / 1040

1050 / 1040 — L/A — 6:1 — 8:1 — 1048.36 — Sta 225+00 — 1051.3 — 1048.36 — 8:1 — Varies — 1050 / 1040 — L/A

END AREA		VOLUME	
CUT	FILL	CUT	FILL
360	170		
		867	1083
108	415		
		394	935
105	90		
		613	167
226			
		1580	
627			
		3201	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 225+00 to Sta. 229+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
224		210	169		
	2489			550	1220
224		87	490		
	2489			1235	2130
224		40	660		
	2489			278	2148
224		110	500		
	2489			574	1374
224		200	242		
	2489			1037	763

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1050 / 1040

1047.91 1046.33 1046.33 1047.91
5:1 8:1 1/4"/ft. 4:1
L/A 2:1 4:1 1/4"/ft
1041.8 1042.5 L/A
Sta 234+00
1047.0

1048.15 1046.57 1046.57 1048.15
6:1
1042.3 1042.75
Sta 233+00
1045.1

1048.39 1046.81 1046.81 1048.39
1042.8 1043.00
Sta 232+00
1044.4

1048.63 1048.63
1043.3 1043.25
Sta 231+00
1045.1

1048.87 1048.87
6:1 8:1 1/4"/ft. 4:1
L/A 2:1 4:1 1/4"/ft
1043.8 1043.5 L/A
Sta 230+00
1046.5

Sta. 230+00 to Sta. 234+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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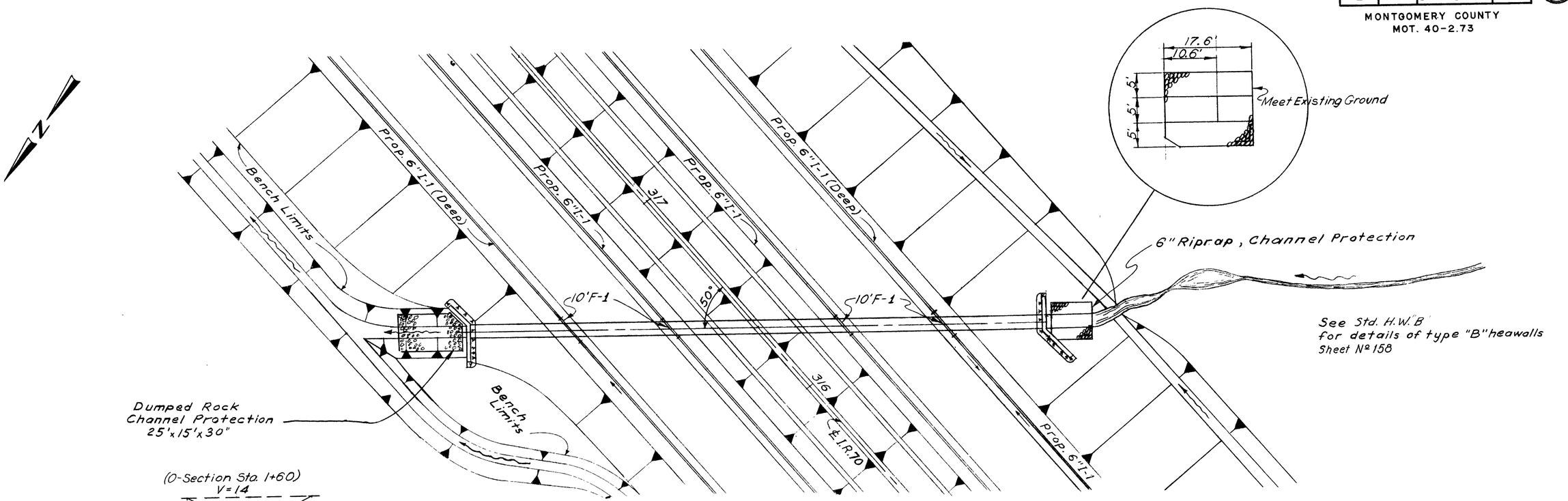
MONTGOMERY COUNTY
MOT. 40-2.73



(0-Section Sta. 1+60)
V=14
A=50
Sta 1+45
970
V=39
A=33
970
Sta 1+19.5

(0-Section Sta 1+36)
V=5
A=38
980
Sta 1+29
V=15
A=40
980
Sta. 1+18.5

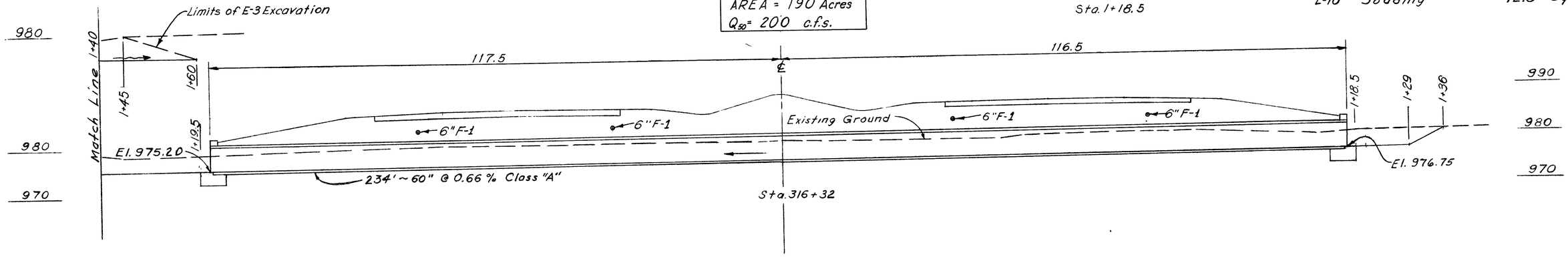
PLAN

Scale 1"=20'

AREA = 190 Acres
Q_{50} = 200 c.f.s.

ESTIMATED QUANTITIES

I-1 - 60" Pipe Culvert, Class "A-1," 234 Lin. Ft.
Sec. M-6.6 (a)
I-2 - Masnry, Std. Type "B" HW. 43 Cu. Yds.
I-10 - 6" Riprap 30.8 Sq. Yds.
I-10 - Dumped Rock, 30" Thick 34.7 Cu. Yds.
E-3 - Channel Excavation 73 Cu. Yds.
L-10 Sodding 12.3 Sq. Yds.



CULVERT SECTION

Scale: 1"=10'

CULVERT SECTION Sta. 316+32

I-70-1(15)20

MONTGOMERY COUNTY

MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
187	2633
208	1849
208	2400
224	2489
224	2489

END AREA		VOLUME	
CUT	FILL	CUT	FILL
18	180	563	922
235	235	659	763
210	280	1200	619
438	54	1839	130
455	16	1232	343

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Bridge Slope 2:1

1050 / 1040 L/A

6:1 1046.71 1045.13 1045.13 1046.71 8:1 6:1

Match Line See Sheet No. 132

Match Line See Sheet No. 132

Sta 239+00
1045.2

Class I-3 Outlet (Method 'C')
℄ 1041.55

Sta No. 8 CB 18 Lt ℄ Rt
Sta 238+25 ℄ Grate = 1045.06
℄ Lt CB 1040.80
℄ Rt CB 1041.87

Class I-3 Outlet (Method 'B')
℄ 1042.31

1050 / 1040

1/4"/ft. 1040.07 4:1 1047.00 1045.37 1045.37 1047.00 8:1 1/4"/ft. 3:1 5:1

2:1 4:1 1039.9
4 c.y. E-3 Excavation

℄ 6" Cl. F-1 @ +25 — 2.10%

0.83% — 15"x88' Pipe Class A-1 See M-6.6(a) or M-6.8(b)

Std Type 'E' Headwall

1041.05 Sta 237+80 1044.8 ℄ 12"x36' Pipe Class E-1

1041.55

1046.83 1046.83 7:1 4:1

Match Line See Sheet No. 132

Sta 238+50 1045.0

℄ 8" Gas Line Crosses ℄ I.70 @ Sta 238+58

Match Line See Sheet No. 132

1050 / 1040

1047.19 1045.61 1045.61 1047.19 4:1

1040.3 Sta 237+00 1044.7 1041.75

1050 / 1040

1047.43 1045.85 1045.85 1047.43

1040.8 Sta 236+00 1047.2 1042.00

1050 / 1040

1047.67 1046.99 1046.99 1047.67 8:1 1/4"/ft. 4:1 4:1

L/A 2:1 1/4"/ft. 4:1

1041.3 Sta 235+00 1047.6 1042.25

L/A

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 235+00 to Sta. 239+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
ENG. WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
238	2644	408	87	2054	309
238	2644	701	80	2282	406
238	2644	532	139	1420	604
238	2644	235	187	676	898
238	2644	130	298	274	885
	2361				

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1050 / 1040 — L/A

Sta 244+00
1044.6
1045.51 1043.93 1043.93 1045.51
1039.8
1037.2
6:1 6:1 8:1 1/4"/Ft. 2:1 2:1
R/W-164'Rt.

Sta. 243+00
1044.8
1045.75 1044.17 1044.17 1045.75
1040.1
1037.9

Sta 242+00
1044.4
1045.99 1044.41 1044.41 1045.99
1040.4
1038.6

Sta 241+00
1044.0
1046.23 1044.65 1044.65 1046.23
1040.7
1039.3

Sta 240+00
1043.8
1046.47 1046.47
1042.3
1040.0
6:1 6:1 8:1 1/4"/Ft. 2:1 2:1
R/W-164'Rt.

Sta. 240+00 to Sta. 244+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
234	2622
238	2556
222	2467
222	2556
238	2644

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1044.07 1044.07
L/A 1040 4:1 6:1 1037.5 Sta 249+00 1040.2 6:1 1/4"/Ft. 8:1 4:1 1040.5 L/A 120 140 R/W-160'Rt. 1040
1030

1044.49 1044.49
L/A 1040 1036.0 Sta 248+00 1037.4 L/A R/W-164'Rt. 4:1 1037.5 1040
1030

Class I-3 Outlet (Method 'C') ℄ 1037.37
Std. No 8 C.B.'s. 13'Lt ℄ Pt.
Sta 247+25
℄ Grates 1042.90
℄ Lt. C.B. 1036.62
℄ Pt. C.B. 1036.99
Class I-3 Outlet (Method 'C') ℄ 1037.49
1044.79 1043.21 1043.21 1044.79
L/A 1040 4:1 1036.87 0.45% 6:1 L/A 2:1 1040
1030 1036.0 1035.7 1030
15"x10' Pipe Class E-1 @ -0.50% (Ahead) Connects with Culvert @ Sta. 247+35
Sta 247+00 1038.3
12"x26' Pipe Class E-1

1045.03 1043.45 1043.45 1045.03
L/A 1040 5:1 1039.0 Sta 246+00 1040.5 8:1 L/A 1040
1030 1036.2 1030

1045.27 1043.69 1043.69 1045.27
L/A 1040 6:1 1039.5 Sta 245+00 1042.4 8:1 1/4"/Ft. L/A 2:1 1040
1030 1036.7 1030
R/W-164'Rt.

1050

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
40	466		
		113	2821
21	1058		
		157	3704
64	942		
		272	2846
83	591		
		431	1672
153	312		
		1039	1739

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 245+00 to Sta. 249+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
185	2056
185	2056
185	2056
185	2328

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1040 L/A 1040.10 1040.10 L/A ℄ R/W
6:1 6:1 8:1 6:1
1035.6 Sta. 254+00 1037.6
1030

1040 L/A 1041.10 1041.10 L/A
1036.6 Sta. 253+00 1038.6
1030

1040 L/A 1042.03 1042.03 L/A
1037.6 Sta. 252+00 1040.4
1030

1050
1040 L/A 1042.84 1042.84 L/A ℄ R/W
1038.6 Sta. 251+00 1041.2
1030

1050
1040 L/A 1043.52 1043.52 L/A
6:1 6:1 8:1 6:1
1039.0 Sta. 250+00 1042.6 R/W
1030

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1040			
49	276		
1030			
		163	894
1050			
39	207		
1040			
		289	644
1050			
117	141		
1040			
		407	398
1050			
103	74		
1040			
		369	324
1050			
96	101		
1040			
		252	1050
1030			

Sta 250+00 to Sta 254+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
234	2617
237	2600
231	2567
231	2548
227	2367
199	2153

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

L/A 150' Lt.
1040
1030
6:1
1029.6
6:1
1034.10
1034.10
Sta. 260+00
1032.5
8:1
6:1
2:1
1040
1030
170
150
L/A
R/W 164' Rt.
2:1
1040
1030
1027.47

L/A 150' Lt.
1040
1030
1030.6
1035.10
1035.10
Sta. 259+00
1034.4
L/A
R/W 163' Rt.
1040
1030
1028.47

L/A 150' Lt.
1040
1030
1031.6
1036.10
1036.10
Sta. 258+00
1034.6
L/A
R/W 162' Rt.
1040
1030
1029.47

L/A 150' Lt.
1040
1030
1032.6
1037.10
1037.10
Sta. 257+00
1035.4
L/A
R/W 160' Rt.
1040
1030
1030.47

Class I-3 Outlet (Method 'B')
℄ 1034.07
Std. № 8 C.B.'s 13' Lt. ℄ Rt.
Sta. 255+50
℄ Grates 1036.68
℄ Lt. C.B. 1033.57
℄ Rt. C.B. 1032.77
Class I-3 Outlet (Method 'C')
℄ 1033.52

L/A 150' Lt.
1040
1030
1033.6
1038.10
1038.10
2.10%
12"×26' Pipe Class E-1
Sta. 256+00
1037.5
1033.02
0.55%
15"×124' Pipe Class A-1
Sec. M-6.6(a) or 6.8(b)
L/A
R/W 159' Rt.
Dumped Rock
8'×2'-8"×18"
1040
℄ 1032.09
2:1
2:1
1030
1031.47
Sta. 255+48
135' Rt. 1032.58'
Std. Type 'E' Headwall

L/A 150' Lt.
1040
1030
8:1
1034.6
6:1
1039.10
1039.10
Sta. 255+00
1038.2
8:1
6:1
L/A
R/W 144' Rt.
1040
1030

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
301	103	1170	226
331	19	1019	283
219	134	952	454
295	111	194	282
350	41	785	193
74	63	228	628

Sta. 255+00 to Sta. 260+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
248	2750
247	2644
229	2622
243	2694
242	2644

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

L/A & R/W 150' Lt.
1030
1020
1029.10
6:1
8:1
1027.00
Sta. 265+00
1031.1
1029.10
1030
1020
2:1
150
L/A
R/W 174' Rt.
2:1
1021.63

L/A & R/W 150' Lt.
1030
1020
1030.10
1027.27
Class I-3 Outlet (Method 'B')
℄ 1025.57
Std. No 8 C.B.'s. 13' Lt & Rt.
Sta. 264+00
℄ Grates 1028.27
℄ Lt. C.B. 1025.07
℄ Rt. C.B. 1024.27
1024.57
2.10%
12"x 26' Pipe Class E-1
Sta 264+00
1030.9
Class I-3 Outlet (Method 'C')
℄ 1025.02
1030.10
1.47%
15"x 70 Pipe Class A-1
Sec M-6.6(a) or M-6.8(b)
Class I-3 Outlet (Method 'C')
℄ 1023.99
Std. No 5 C.B. 83' Rt.
℄ Grate 1027.72
℄ Rt. Rdwy C.B. 1023.24
Variable
6:1
L/A
R/W 173' Rt.
Dumped Rock
10'x 2'x 18"
1030
-℄ 1022.95
1021.95
1020
0.55%
15"x 52' Pipe Class E-1
Std Type 'E' Headwall

L/A & R/W 150' Lt.
1030
1020
1031.10
1027.52
8:1
Sta. 263+00
1031.5
1031.10
L/A
R/W 171' Rt.
1030
1024.47
1020

L/A & R/W 150' Lt.
1030
1020
1032.10
6:1
1027.77
Sta. 262+00
1030.7
1032.10
L/A
R/W 169' Rt.
1030
1025.47
1020

L/A & R/W 150' Lt.
1030
1020
1033.10
6:1
6:1
1028.6
Sta. 261+00
1031.1
1033.10
Variable
6:1
L/A
R/W 168' Rt.
1040
1030
2:1
2:1
1026.47
1020

END AREA		VOLUME	
CUT	FILL	CUT	FILL
634	0	218	0
543	0	178	0
419	0	104	152
147	136	59	53
173	152	87	47

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 261+00 to Sta. 265+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
256	2833	70	254	313	1194
254	2811	99	391	372	932
252	2794	75	112	294	533
251	2783	84	176	937	370
250	2767	422	24	1956	44

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

L/A & R/W 150' Lt.
1030
1020
6:1 8:1
1024.10 1024.10
Sta. 270+00
1021.4
L/A 159' Rt.
R/W 182' Rt.

L/A & R/W 150' Lt.
1030
1020
1025.10 1025.10
Sta. 269+00
1021.0
R/W 180' Rt.
L/A

L/A & R/W 150' Lt.
1030
1020
1026.10 1026.10
Sta. 268+00
1024.5
L/A
R/W 178' Rt.

L/A & R/W 150' Lt.
1030
1020
6:1 1024.5 8:1
1027.10 1027.10
Sta. 267+00
1025.0
L/A
R/W 177' Rt.
2:1 2:1
1021.00

L/A & R/W 150' Lt.
1030
1020
6:1 1025.0 6:1
1028.10 1028.10
Sta. 266+00
1028.1
L/A
R/W 176' Rt.
2:1 2:1
1021.31

Sta. 266+00 to Sta. 270+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
280	3080
269	2972
266	2844
246	2711
242	2767

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1030 / 1020 / 1010

L/A & R/W 150' Lt.
1019.10
6:1 8:1
Sta. 275+00
1022.1
1019.10
1/4"/Ft.
6:1
L/A 160' Rt.
R/W & Pt 206' Rt.

L/A & R/W 150' Lt.
1020.10
Sta. 274+00
1023.0
1020.10
L/A 160' Rt.
R/W & Pt 195' Rt.

Std No 8 C.B.'s. 13' Lt & Rt
Sta 272+40
℄ Grates 1019.87
℄ Lt C.B. 1016.42
℄ Rt C.B. 1016.05
Class I-3 Outlet (Method 'C')
℄ 1016.67
Class I-3 Outlet (Method 'C')
℄ 1016.67
1021.10
1021.10
1016.30
0.45%
12"x26' Pipe Class E-1
Sta 273+00
1020.0
15"x10' Pipe Class E-1
@ -0.50% (Ahead)
Connects With Culvert
@ Sta. 272+50

L/A & R/W 150' Lt.
1021.10
L/A 160' Rt.
R/W & Pt 192' Rt.

See Sheet No 164
for Culvert Details

L/A & R/W 150' Lt.
1022.10
1018.5
Sta. 272+00
1018.3
1022.10
L/A 160' Rt.
R/W & Pt 188' Rt.

L/A & R/W 150' Lt.
1023.10
6:1 8:1
Sta. 271+00
1020.0
1023.10
6:1
L/A 160' Rt
R/W & Pt 184' Rt.

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
688	0	2226	37
514	20	1322	482
200	240	389	1383
10	507	12	1550
12	330	152	1082

Sta. 271+00 to Sta. 275+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-273

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
326	3561	192	56	193	104
315	3522	452		2220	
319	3472	747		3237	
306	3328	1001		3057	
293	3183	650		2478	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

L/A & R/W 150' Lt.
1020
1010
6:1
8:1
1014.10
1014.10
7:1
L/A 160' Rt.
R/W & PE 268' Rt.
1010
Sta. 280+00
1013.9

L/A & R/W 150' Lt.
1020
1010
Variable
8:1
1015.1
1015.10
8:1
L/A 160' Rt.
R/W & PE 257' Rt.
1020
1010
Sta. 279+00
1017.1

L/A & R/W 150' Lt.
1020
1010
1016.10
1016.10
L/A 160' Rt.
R/W & PE 245' Rt.
1020
1010
Sta. 278+00
1018.3

1030
1020
1010
L/A & R/W 150' Lt.
3:1
8:1
1017.10
1017.10
L/A 160' Rt.
R/W & PE 232 Rt.
1020
1010
Sta. 277+00
1020.2

L/A & R/W 150' Lt.
1020
1010
4:1
8:1
1018.10
1018.10
8:1
L/A 160' Rt.
R/W & PE 219' Rt.
1020
1010
Sta. 276+00
1021.1

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 276+00 to Sta 280+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
324	
	3639
331	
	3771
337	
	3783
344	
	3861
351	
	3761

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1020 / 1010 / 1000

L/A & R/W 150' Lt.

6:1 8:1

1009.10 1009.10

Sta. 285+00
1008.4

L/A 160' Rt.
R/W 250' Rt.

6:1

1020 / 1010 / 1000

L/A & R/W 150' Lt.

1010.10 1010.10

Sta. 284+00
1012.7

L/A 160' Rt.
R/W 257' Rt.

1/4"/ft.

1020 / 1010 / 1000

L/A & R/W 150' Lt.

1011.10 1011.10

Sta. 283+00
1013.8

L/A 160' Rt.
R/W 263' Rt.

1020 / 1010 / 1000

L/A & R/W 150' Lt.

1012.10 1012.10

Sta. 282+00
1015.2

L/A 160' Rt.
R/W 270' Rt.

1/4"/ft.

6:1

Class I-3 Outlet (Method 'B')
℄ 1009.07

Std. No 8 C.B's. 13' Lt. & Rt.
Sta. 280+50
℄ Grates 1011.77
℄ Lt. C.B. 1008.57
℄ Rt. C.B. 1007.77

Class I-3 Outlet (Method 'C')
℄ 1008.52

L/A 159' Rt.
R/W 277' Rt.

1020 / 1010 / 1000

L/A & R/W 150' Lt.

6:1 8:1

1013.10 1013.10

1008.02

2.10%

12"x26' Pipe Class E-1
Sta. 281+00
1013.6

0.55%

15"x80' Pipe Class A-1
Sec. M-6.6(a) or M-6.8(b)

Std. Type 'E' Headwall
℄ 1007.33

0.24%

Existing Ground
@ Sta. 280+50

1010 / 1000
0.24%
Sta. 280+50 (Right)
160 180

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
127	144		
		1046	267
438	0		
		1872	0
573	8		
		2215	8
623	8		
		1487	59
180	32		
		689	163

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 281+00 to Sta. 285+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
283	3189	22	230	69	704
291	3283	15	150	87	870
300	3289	32	320	87	1278
292	3378	15	370	93	1222
316	3556	35	290	300	804

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1010 / 1000 / 990

L/A & R/W 150' Lt.
1004.10 — 1004.10
6:1 — 6:1 — 6:1
1000.00
Sta. 290+00
1002.9
L/A 160' Rt.
R/W 209' Rt.

L/A & R/W 150' Lt.
1005.10 — 1005.10
7:1 — 6:1
Sta. 289+00
1003.9
L/A 160' Rt.
R/W 217' Rt.

Class I-3 Outlet (Method 'B')
℄ 1001.57
Std. N° 8 C.B's. 13' Lt & Rt.
Sta. 288+00
℄ Grates 1004.27
℄ Lt. C.B 1001.07
℄ Rt. C.B 1000.27
Class I-3 Outlet (Method 'C')
℄ 1001.02

L/A & R/W 150' Lt.
1006.10 — 1006.10
8:1 — 4:1
1000.52
2.10% — 0.55% — 0.24%
12"×26' Pipe Class E-1
Sta 288+00
1003.3
15"×80' Pipe Class A-1
Sec. M-6.6(a) or 6.8(b)
℄ 999.83
Std. Type 'E' Headwall
L/A 160' Rt.
R/W 226' Rt.

L/A & R/W 150' Lt.
1007.10 — 1007.10
6:1
Sta. 287+00
1004.2
L/A 160' Rt.
R/W 234' Rt.

L/A & R/W 150' Lt.
1008.10 — 1008.10
6:1 — 8:1 — 6:1
Sta. 286+00
1005.9
L/A 160' Rt.
R/W 242' Rt.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 286+00 to Sta. 290+00

SEEDING END WIDTH	SEEDING SQ. YDS.
140	
120	
100	
80	
60	
40	
20	
℄	
20	
40	
60	
80	
100	
80	
218	2011
234	2600
234	2156
154	2372
273	3089

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

L/A & R/W 150' Lt.
2:1
1/4"/Ft
992.50
4:1
1000.76
Sta. 295+00
1001.2
1000.76
8:1
4:1
L/A & R/W 160' Rt.

L/A & R/W 150' Lt.
Ahead
Back
1001.03
Sta. 294+00
995.0
1001.03
6:1
4:1
L/A & R/W 160' Rt.
See Sheet Nº 165, 166, 167
for Culvert Details

See Sheet Nº 165, 166, 167
for Culvert Details

L/A & R/W 150' Lt.
4:1
1001.52
Sta. 293+00
991.2
1001.52
4:1
2:1
L/A & R/W 160' Rt.
Match Line
See sht. no. 141

L/A & R/W 150' Lt.
Bridge Slope
6:1
1002.20
Match Line
See Sht. No. 141
Sta. 292+00
996.5
1002.20
6:1
Bridge Slope
2:1
L/A & R/W 160' Rt.
Match Line
See Sht. No. 141

See Sheet Nº 165, 166, 167
for Culvert Details

L/A & R/W 150' Lt.
1/4"/Ft.
6:1
998.21
4:1
1003.10
Sta. 291+00
999.8
1003.10
4:1
L/A 160' Rt.
R/W 199' Rt.

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
417	91		
		782	1750
AHD. 5 BK. 5	AHD. 854 BK. 828		
		9	4400
0	1521		
		41	4415
0	863		
		26	2674
14	581		
		67	1502

Sta 291+00 to Sta 295+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
217	2456
225	2533
231	2494
218	2539
239	2539

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1010 / 1000 / 990

L/A & R/W 150' Lt.

1001.57

6:1 8:1

Sta. 300+00
1004.4

L/A & R/W 160 Rt.

1001.57

8:1 3:1

L/A & R/W 150' Lt.

1001.33

6:1

Sta. 299+00
1003.6

L/A & R/W 160' Rt.

1001.33

6:1

L/A & R/W 150' Lt.

1001.08

Varies

Sta. 298+00
1004.7

L/A & R/W 160' Rt.

1001.08

Varies

Std. Nº 8 C.B.'s. 13' Lt. & Rt.
Sta 296+50
℄ Grates 998.91
℄ Lt. C.B. 996.58
℄ Rt. C.B. 996.71

L/A & R/W 150' Lt.

1000.84

Varies

0.50%
12"×26' Pipe Class E-1
Sta. 297+00
1003.9

L/A & R/W 160' Rt.

1000.84

998.71

Std. Nº 8 C.B.'s. 13' Lt. & Rt.
Sta. 295+50
℄ Grates 998.87
℄ Lt. C.B. 995.23
℄ Rt. C.B. 995.62

Class I-3 Outlet (Double Method 'C')
℄'s 994.11 & 995.37
Class I-3 Outlet (Double Method 'C')
℄ 995.98

Class I-3 Outlet (Method 'D')
℄ 995.87

L/A & R/W 150' Lt.

1000.69

℄ 994.05
4:1 6:1 8:1
995.48
0.24%
1.40%
0.55%

Existing Ground
Sta 295+50 (Left)

Dumped Rock
5'×2'-8"×30"

Std. Type E'
Headwall

15"×84' Pipe Class A-1
Sec. M-6.6(a) or M-6.8(b)

12"×100' Pipe Class E-1
@ +1.10%

12"×26' Pipe Class E-1
Sta. 296+00
999.5

L/A & R/W 160' Rt.

1000.69

8:1 Varies
998.47

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
817	0		
			27/81
685	0		
			28/17
836	0		
			31/5
846	0		
			20/69 4/4
271	24		
			12/14 2/3

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 296+00 to Sta 300+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
193	2206	14	775	119	1924
204	2300	50	264	487	550
210	2344	213	33	1219	61
214	2367	445	0	2398	0
214	2394	850	0	3087	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1010
1000
990

L/A & R/W 150' Lt.
5:1
6:1
996.0
1002.38
1002.38
L/A & R/W 160' Rt.
6:1
997.9 6:1
Sta. 305+00
997.7

L/A & R/W 150' Lt.
6:1
997.0
1002.45
1002.45
L/A & R/W 160' Rt.
8:1
1000.32 6:1
Sta. 304+00
999.8

L/A & R/W 150' Lt.
6:1
8:1
998.0
1002.31
1002.31
L/A & R/W 160' Rt.
8:1
1000.18
Varies
Sta. 303+00
1001.8

L/A & R/W 150' Lt.
999.9
8:1
1002.06
1002.06
L/A & R/W 160' Rt.
Sta. 302+00
1003.2

L/A & R/W 150' Lt.
6:1
8:1
1001.82
1001.82
L/A & R/W 160' Rt.
8:1
Varies
Sta. 301+00
1005.4

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
256		20	949		
	2661			54	3180
223		9	1092		
	2367			30	3996
203		7	904		
	2089			35	3287
173		12	871		
	1983			82	3376
184		AHD 32 BK. 110	AHD 952 BK. 1112	230	3817
	2094				

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

L/A & R/W 165' Lt.
1000
990
4:1
3:1
989.0
999.04
Sta. 310+00
993.5
999.04
6:1
L/A & R/W 225' Rt.
993.93
6:1

L/A & R/W 161' Lt.
1000
990
992.0
1000.04
Sta. 309+00
993.6
1000.04
L/A & R/W 186' Rt.

Match Line
Ramp "B"
See Sht No. 153

L/A & R/W 154' Lt.
1000
990
994.0
1000.94
Sta. 308+00
994.9
1000.94
6:1
L/A & R/W 170' Rt.

L/A & R/W 150' Lt.
1000
990
993.0
1001.63
Sta. 307+00
995.5
1001.63
L/A & R/W 163' Rt.

Match Line
Ramp "B"
See Sht No. 153

L/A & R/W 150' Lt.
1000
990
4:1
3:1
991.6
1002.11
Sta. 306+00
995.6
1002.11
L/A & R/W 160' Rt.
4:1
992.6
3:1

Ahead
Back

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 306+00 to Sta. 310+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
198	2117
183	1944
167	1723
178	1192
170	2367

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
AHD	AHD		
18	236		
Bk.	B.k.		
103	281		
		343	1183
82	358		
		326	1378
94	386		
		355	1419
121	474		
		300	1021
142	421	300	2167

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1000 / 990

L/A & R/W 195' Lt.
Match Line Ramp "A" See Sht. No. 151
6:1
BACK
AHEAD
994.53
994.53
3:1
4:1
Sta. 309+00
991.9
6:1
6:1
991.00

L/A & R/W 172' Lt.
995.53
995.53
987.6
Sta. 308+00
992.8
991.65

L/A & R/W 164' Lt.
996.53
996.53
988.0
Sta. 307+00
993.8
992.30

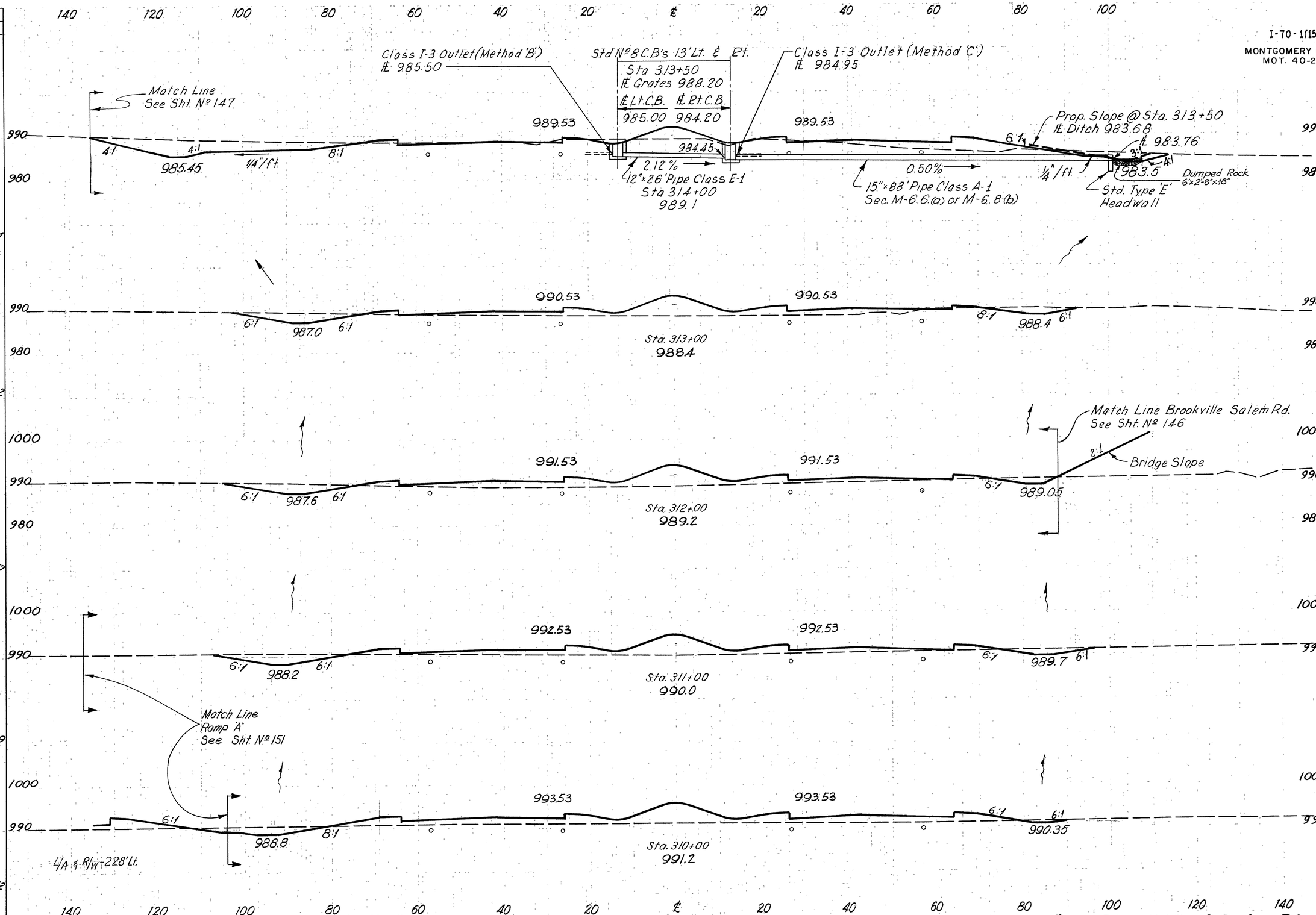
L/A & R/W 163' Lt.
997.53
997.53
988.4
992.88

Station Equation
311+61.63 (Back)
306+10.10 (Ahead)
994.1
Std No. 8 C.B's 13' Lt. & Rt.
Sta. 311+50
℄ Grates 995.71
℄ Lt. C.B. 991.71
℄ Rt. C.B. 992.51
Class I-3 Outlet (Method 'C')
℄ 992.46
Class I-3 Outlet (Method 'B')
℄ 993.01
L/A & R/W 163' Lt.
Dumped Rock
10'x2'-8"x18"
℄ 991.14
998.04
998.04
4:1
3:1
988.6
2.10%
0.55%
991.96
Sta. 311+00
994.7
15"x104' Pipe Class A-1
Sec M-6.6(a) or M-6.8(b)
12"x26 Pipe Class E-1
Std Type 'E' Headwall
6:1
6:1
993.28

Sta. 311+00 to Sta. 309+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
184	1594
103	1222
117	1367
129	1939
220	2322



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
163	94		
		4 1/1	4 6/3
59	156		
		2 1/3	5 0/5 7/4
56	165		
		2 0/8	6 2/2
55	171		
		1/6 3	7 8/0
33	250		
		9/4	9 0/0

(AHEAD) **Sta. 310+00 to Sta. 314+00**

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING END WIDTH	SEEDING SQ. YDS.
190	2147
191	2111
189	1833
141	1572
142	1811

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

990 / 980 / 970

L/A

985.07 — 985.07

2:1 — 974.5

6:1 — 4:1

Sta. 319+00
983.4

985.83 — 985.83

2:1 — 974.8 — 1/4"/ft.

6:1 — 4:1

Sta. 318+00
980.8

986.65 — 986.65

4:1 — 982.0 — 1/4"/ft.

6:1 — 4:1

Match Line See Sht. Nº 147

Sta. 317+00
980.3

Bridge Slope — 987.55 — 987.55 — 7:1 — 6:1 — 3:1

Sta. 316+00
982.1

Match Line
Brookville - Salem Road
See Sht. Nº 147

Bridge Slope — 988.53 — 988.53 — 7:1 — 6:1 — 4:1

Sta. 315+00
985.0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
223	362	7/6	19/19
196	674	7/6	269/1
99	779	269	273/9
46	700	241	208/3
84	425	387	96/1

Sta. 315+00 to Sta. 319+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
191	1061
191	2117
190	2022
174	1933
174	2022

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

990 / 980 / 970

L/A — R/W

8:1 — 6:1 — 981.65 — 981.65 — 8:1 — 6:1

Sta. 323+50
981.1

990 / 980

L/A — R/W

6:1 — 8:1 — 982.03 — 982.03 — 8:1 — 4:1

Sta. 323+00
982.8

990 / 980

L/A — R/W

6:1 — 8:1 — 982.79 — 982.79 — 8:1 — 3:1

Sta. 322+00
982.3

Class I-3 Outlet (Method 'C')
℄ E 978.29

Std. № 8 C.B's. 13' Lt. ℄ Rt.
Sta. 321+15
℄ Grates 981.61
℄ Lt. C.B. 1077.54
℄ Rt. C.B. 1078.38

Class I-3 Outlet (Method 'C')
℄ E 978.88

990 / 980 / 970

L/A — R/W

983.55 — 983.55 — 977.79

6:1 — 2:1 — 2:1 — 974.70 — 1¼" / ft. — 6:1 — 3:1

15"×10' Pipe Class E-1
@ -6.20%
Connects with Culvert
@ Sta. 321+25

2.27%

12"×26' Pipe Class E-1
Sta. 321+00
981.6

990 / 980 / 970

L/A — R/W

984.31 — 984.31

6:1 — 2:1 — 2:1 — 974.45 — 1¼" / ft. — 8:1 — Varies

Sta. 320+00
984.6

END AREA		VOLUME	
CUT	FILL	CUT	FILL
153	52		
		615	48
511	0		
		1811	
467	0		
		1263	512
215	282		
		1016	776
334	137		
		1020	924

Sta. 320+00 to Sta. 323+50

FED. ROAD DIV. NO.	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

MONTGOMERY COUNTY

MOT. 40-2.73

88

SEEDING	
END WIDTH	SQ. YDS.
160	1772
159	1767
159	1889
181	2067
191	1061

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

970 980 990

978.23 978.23 978.99 978.99 979.75 979.75 980.51 980.51 981.27 981.27

6:1 8:1 Varies 3:1

L/A 214' Lt.

Sta. 328+00 982.1

Sta. 327+00 984.8

Sta. 326+00 987.6

Sta. 325+00 985.5

Sta. 324+00 983.1

R/W L/A

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
950		4196	
1370		5694	
1705		5611	
1325		3463	
545		623	48

Sta. 324+00 to Sta. 328+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
84	1083	26	29	189	119
92		76	34	556	67
103	593	224	2	652	2
142	1567	585	0	2513	
140	1667	772	0	3189	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

980 / 970

974.65 974.65

Sta. 336+00
972.9

Class I-3 Outlet (Method 'B')
℄ 971.51

Std. No 8 C.B's. 13' Lt. ℄ Pt.
Sta. 334+50
℄ Grates 974.17
℄ Lt. C.B. 971.01
℄ Pt. C.B. 970.17

Class I-3 Outlet (Method 'C')
℄ 971.17
Class I-3 Outlet (Method 'C')
℄ 969.67

975.60 975.60

970.42

2.27%
Sta. 335+00
974.3
12"×26' Pipe Class E-1

0.60%
15"×84' Pipe Class A-1
Sec. M-6.6(a) or M-6.8(b)

Prop. Slope Sta. 334+50
6:1 4:1
℄ 969.67
4:1
℄ Ditch 969.17
Dumped Rock
10'×2'-8"×18"
Std Type 'E'
Headwall

980 / 970

976.38 976.38

8:1 6:1

R/W

Station Equation
330+43.55 (Back)
334+00 (Ahead)
976.4

990 / 980 / 970

976.71 976.71

Variable

8:1 6:1

R/W

Sta. 330+00
978.17

980 / 970

977.47 977.47

6:1 8:1 8:1 3:1

R/W

Sta. 329+00
979.87

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 329+00 to Sta. 336+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
105	1272	75	23	461	332
124	1350	66	156	228	422
119	1267	57	72	193	337
109	1206	47	110	156	359
108	1067	37	84	117	209

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 90

970 960 980

L/A 240' Lt.

967.81 967.81 2:1 Variable

Sta 341+00
965.2

969.29 969.29 4:1 4:1 8:1 3:1

Sta 340+00
966.2

970.77 970.77 8:1 3:1

Sta 339+00
968.1

972.22 972.22 4:1 4:1 2:1 Variable

Sta 338+00
969.4

973.53 973.53 Variable 4:1

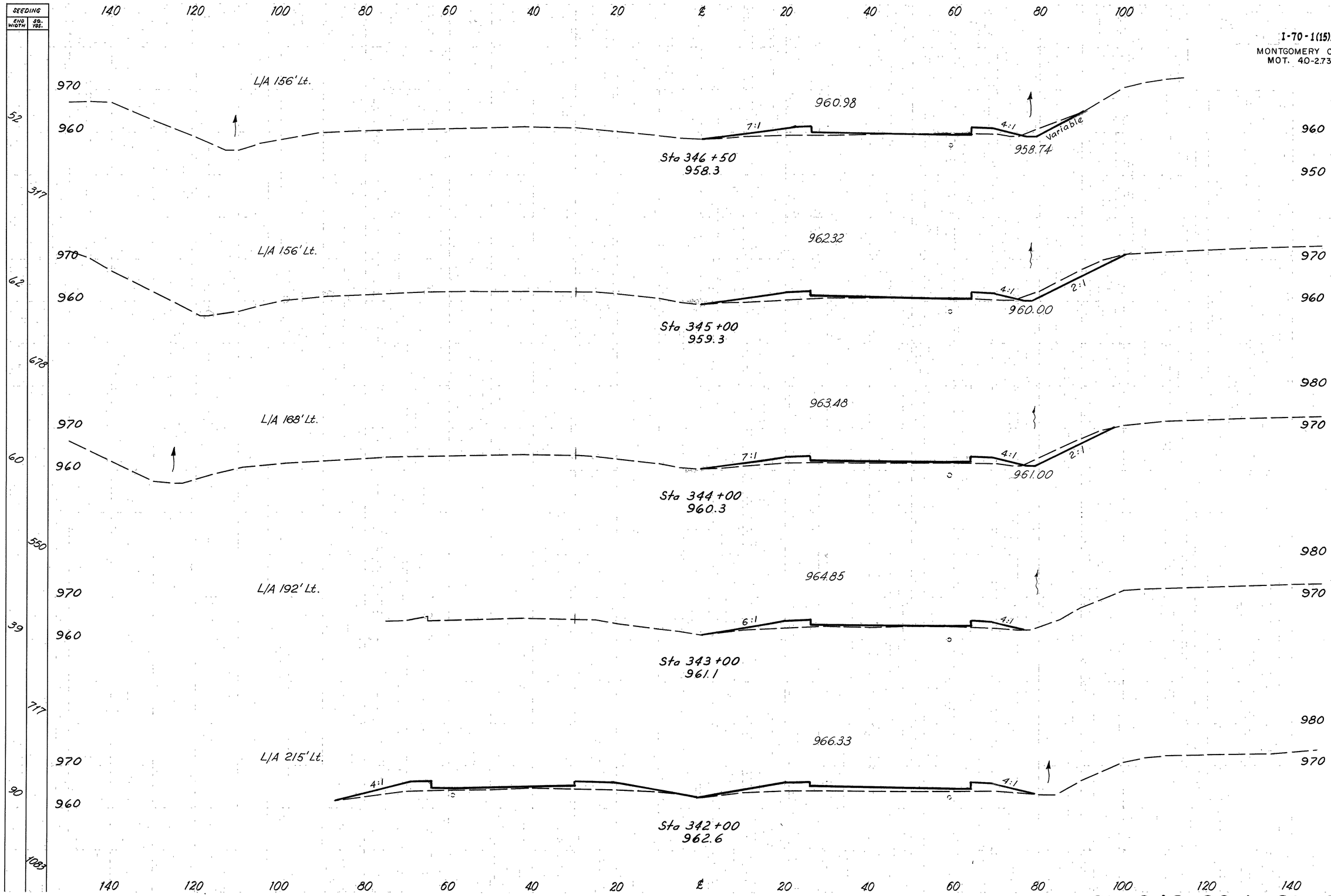
Sta 337+00
971.0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 337+00 to Sta. 341+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	
52	317	9	68	47	116
62	678	42	57	152	239
60	550	40	72	190	133
39	717	62	0	470	
90	1083	192	0	494	43

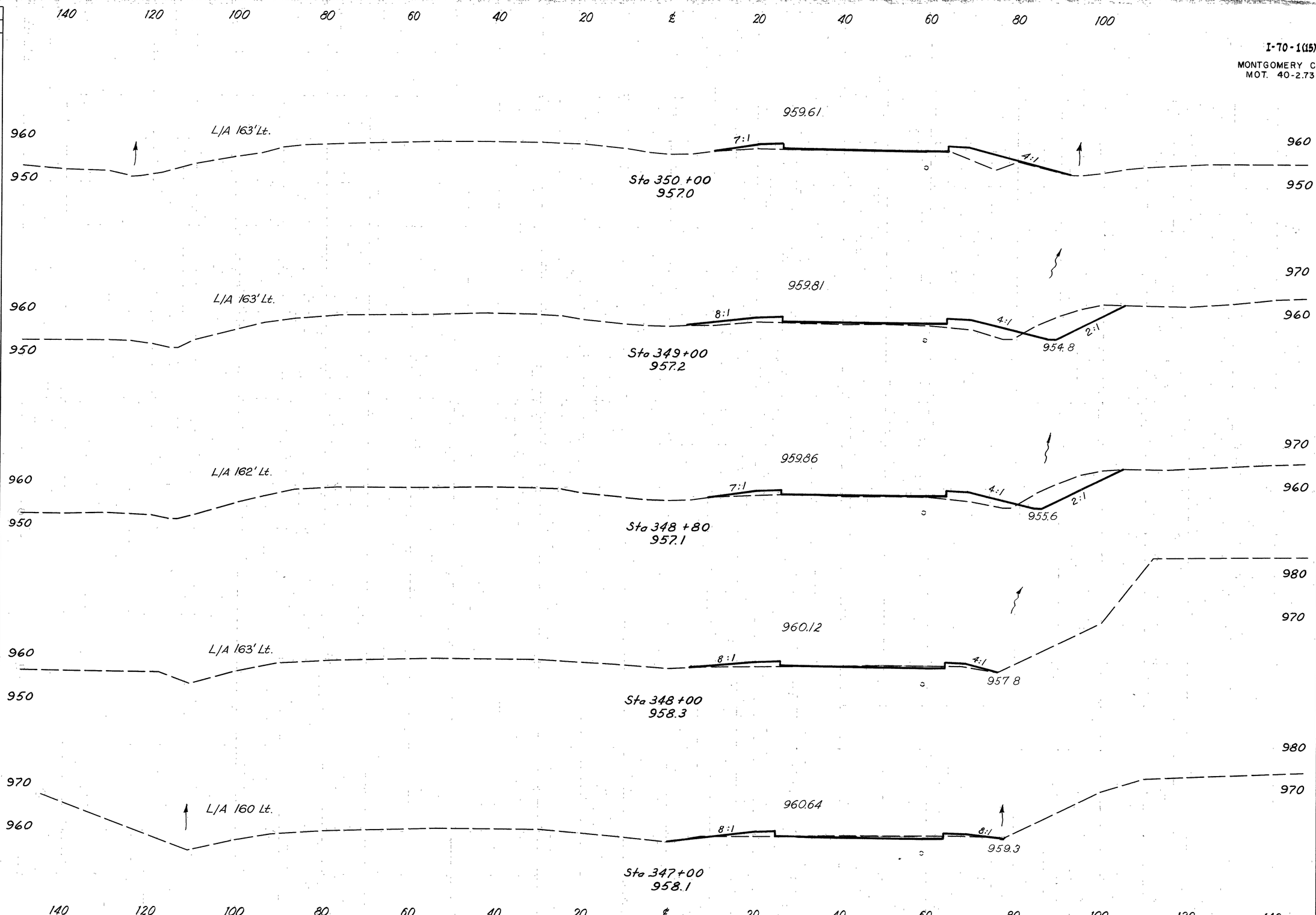


Sta 342+00 to Sta 346+50

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING	
END WIDTH	SQ. YDS.
54	672
67	149
67	467
38	433
40	256



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	62		
		12	24
68	86		
		50	51
68	52		
		10	18
0	28		
		13	74
7	12		
		15	74

Sta 347+00 to Sta 350+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING

END WIDTH	SQ. YDS.
30	
	328
29	
	66
29	
	254
30	
	400
34	
	489

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

L/A 156' Lt.

958.61

L/A 219' Rt.

960
950

3:1

Sta 355+00
956.0

L/A 161' Lt.

958.81

L/A 230' Rt.

960
950

8:1 4:1

Sta 354+00
956.2

Sta. 353+20.34
(Back of Abutment)
AHEAD

L/A 161' Lt.

959.01

960
950

Sta 353+00
953.6
(BRIDGE SECTION)

Sta. 352+60.24
(Back of Abutment)
BACK

L/A 161' Lt.

959.21

960
950

8:1 7:1

Sta 352+00
956.6

L/A 160' Lt.

359.41

960
950

7:1 4:1

Sta 351+00
956.8

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
950	3	21		
940			6	70
960				
950	0	17		50
	0	17		
			0	63
960				
950	0	63		140
960				
950	0	42		104

I-70-1(15)20

MONTGOMERY COUNTY

MOT. 40-2.73

143 Real (94-18

SEEDING	
END WIDTH	SQ. YDS.
9	256
37	433
41	394

END AREA		VOLUME	
CUT	FILL	CUT	FIL
		18	
42	0	12	2
26	15	48	5
0	14	6	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

960 950 940

Sta 360+00
955.2

960 950 940

Sta 359+00
955.4

960 950 940

R/W 141' Lt.

Sta 358+00
955.4

958.01

R/W 188' Rt.

960 950 940

R/W 144' Lt.

Sta 357+00
955.9

958.21

4:1 956.1 4:1

R/W 199' Rt.

960 950 940

R/W 150' Lt.

Sta 356+00
955.9

958.41

4:1 955.5 4:1

R/W 209' Rt.

960 950

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 356+00 to Sta. 360+0

MONTGOMERY COUNTY
MOT. 40-2.73

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

960
950
940

Sta 364+00
954.2

Sta 363+00
954.8

Sta 362+00
955.2

Sta 361+00
955.2

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 361+00 to Sta 364+00

SEEDING	
END WIDTH	SQ. YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

96

MONTGOMERY COUNTY
MOT. 40-2.73

END AREA		VOLUME	
CUT	FILL	CUT	FILL

970
960
950

Sta 368+00
953.5

960
950

Sta 367+00
953.9

960
950

Sta 366+00
954.1

960
950

Sta 365+00
954.0

950
940
960
950
960
950
940

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 365+00 to Sta. 368+00

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

Trees and Stumps to be removed
12" - 18" 15

Proposed ℄ S.R.311
N 1°14'29"W

Relocated Upper Lewisburg Salem Road
Sta 22+13.28
℄ Sta. 12+21.38 ℄ S.R.311

Begin Work
Sta. 22+09.50

Match Line Sta. 33+00

Pond
Penn B&O R R
Penn. B&O R.R. Existing R.O.W.
S 61°28'59"E
Hub 40+00.00
I.R. 70
72°24'
Rel. Upper Lewisburg-Salem
34.47
Tab in Tele Pole # L14-3
37.83
46.12
S.R. 311
Tab in 1st Guard Post
Tab in 4th Post
R R Spike
Sta 12+21.38-SR 311
Sta. 22+13.28-Rel Upper Lewisburg-Salem Rd.
Fr Chicken Houses
Fr. Barn
Fr & Bl Gar
Black Top Drive
2½-Sty Fr. Res
C.B. 18" Mapl
C.W.
12" CMP
24" CMP
Inv. 1015.88
MB
Septic Tank
Flasher Signal
Signal Controls
30 M.P.H. Sign
Gravel Drive
Existing R/W
10" Tile
30 R.
Plug
Anchor
Brace pole
12" Pine
15" Pine
10" Tree
2-10" Trees
2-18" Willows
Row of 17 Pine 8"-15"
Row of 26 Pine 8"-15"
30" Elm.
5" Maple
L.P.
2-Sty. Fr. Res.
Frame Barn
Fr Chicken House
Brick Garage
Gravel Drive
6' Lt.
Residence Drive
2-D
2-A
3-D
1-A
1-D
1-E
1-G
5" Tile To Be Abandoned
Conc Slab Found
12" Tile
8" Tile
12" Vit Pipe
Existing Box Culvert 7'x12'
Stone Walls
Well
1-Sty Fr. Res
Fr Gar
Conc Well Cover
Conc Dr.
Shrubs
Fish Pond
Fr. Shed
Fr Chicken House
Privy
Fr Barn
Conc Dr
Gr Dr
12" CMP Inv. 1024.63
4 Tr.

1037.90 1038.25 1038.60 1038.95 1039.09 1039.14 1039.12 1039.03 1038.86 1038.61 1038.29 1037.88 1037.40 1036.84 1036.21 1035.50 1034.00 1032.80 1031.00 1029.50 1028.00 1026.50 1025.82 1025.30 1024.91 1024.68 1024.59 1024.66 1024.86 1025.22 1026.08 1026.94 1027.40

1033.7 1035.3 1037.2 1035.8 1033.8 1030.8 1028.2 1026.0 1022.7 1021.2 1019.4 1025.7 1026.7 1027.4 1027.5

33 32 31 30 29 28 27 26 25 24 23 22

L.V.C. = 300'
Profile Grade Line
Prop. Relocated Upper Lewisburg-Salem Rd.
Existing Ground
-0.70%
+3.00%
-1.72%
L.V.C. = 200'
PVT Sta 31+50 Elev. 1038.95
PVI Sta 30+00 Elev. 1040.00
PVC Sta 28+50 Elev. 1035.50
PVT Sta 25+50 Elev. 1026.50
PVI Sta 24+50 Elev. 1023.50
PVC Sta 23+50 Elev. 1025.22
Prop. Culvert Sta 23+00 See Sht No 171
1025.18
1024.38
65"x40"x42' Pipe-Arch Class A-1 @ 2.00% See Sht No 100
Begin Work Sta 22+09.50 Elev. 1027.4±
℄ S.R.311 Sta 12+21.38
℄ Proposed Relocated Upper Lewisburg-Salem Road Sta 22+13.27

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe		I-10	I-15	B-19	T-35	I-2	L-120
			Class A-1		Dumped Rock	Guard Rail Remove & Stk'd	Aggregate Base Course	Asphaltic Concrete Surface Course 2"	Masonry Head-Walls	Turf Matting
			M-6.66(i)	M-64(i) (c)						
			18"	65"x40" 18"		Standard		Type C 5.3 (70-85)	Type 5	
			L.F.	L.F.	C.Y.	L.F.	C.Y.	C.Y.	C.Y.	S.Y.
1-D	23+00	L&R	60		2.3				.60	
2-D	26+92 – 27+34	L		42					5.4	
3-D	23+05 – 29+00	L								736
1-R	11+57 – 12+32	L				37.5				
1-G	22+18 – 22+43	L				25				
1-A	27+14 –	L					9.9	4.0		
2-A	27+14	L					11.7			
			60	42	2.3	37.5	21.6	4.0	5.4	736

Excavation 2806 C.Y.
Embankment 3990 C.Y.
Embankment+12% 4458 C.Y.

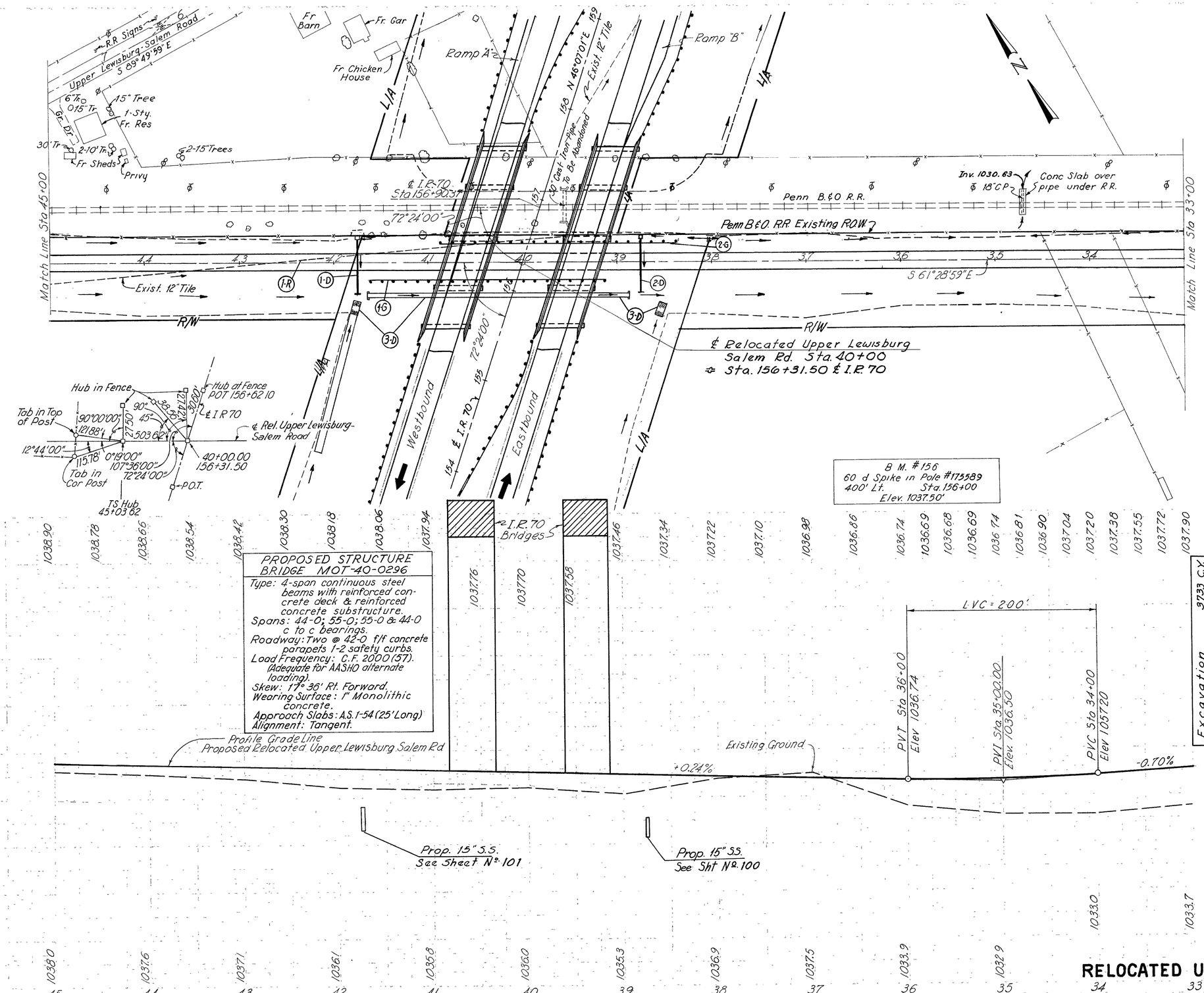
RELOCATED UPPER LEWISBURG SALEM RD.

Sta. 22+13.27 To Sta. 33+00

I-70-1(15)20

MONTGOMERY COUNTY

MOT. 40-273



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Class A2 W&G (e) W&I (s) 15" L.F.	I-1 Class B-1 42" L.F.	I-2 Masonry Headwalls Type E* C.Y.	I-8 Catch Basins Std. 252-A EA.	I-15 Guard Rail Steel Beam Standard L.F.	I-10/1 Dumped Rock Channel Prot* C.Y.	E-12 Pipe Removed 15" ℄ UNDER 18" L.F.
1-D	41+75	L&R	60		0.23	1			
2-D	38+75	L&R	60		0.23	1			
1-G	39+12 - 41+62	L					250		550
2-G	38+37 - 40+87	R					250		
3-D	40+00	L		278	1.52			13.3	
1-R	39+50 - 45+00	L&R				2	500		550
		Total	120	278	1.98	2	500	13.3	550

RELOCATED UPPER LEWISBURG SALEM RD.

Sta. 33+00 To Sta. 45+00

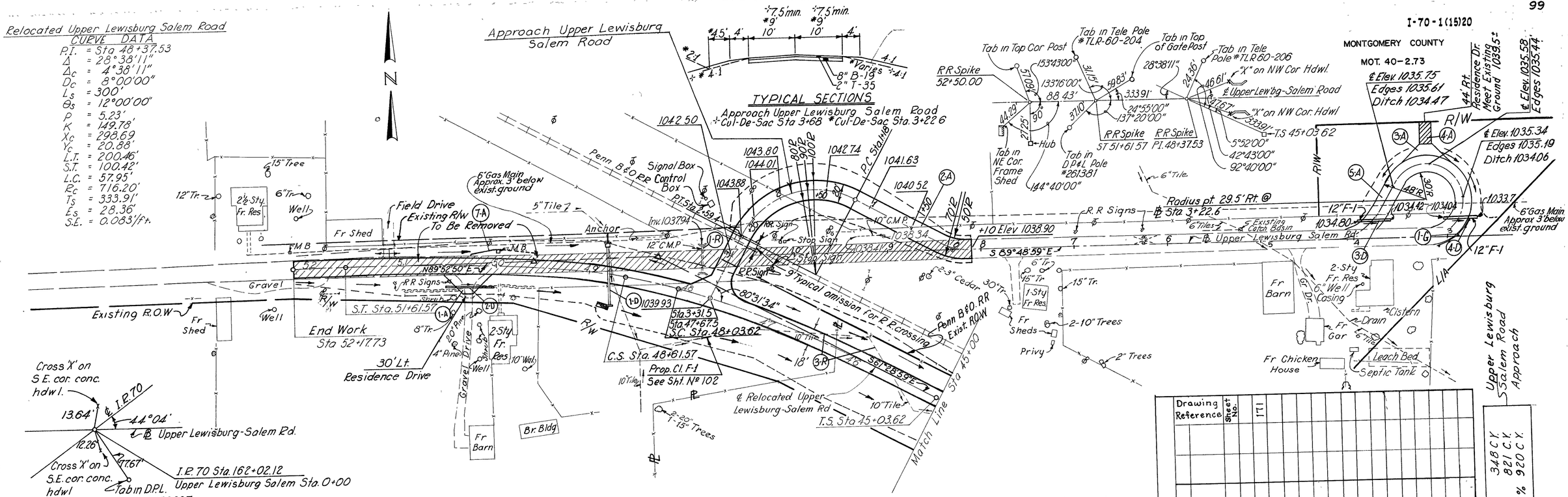
I-70-1(15)20

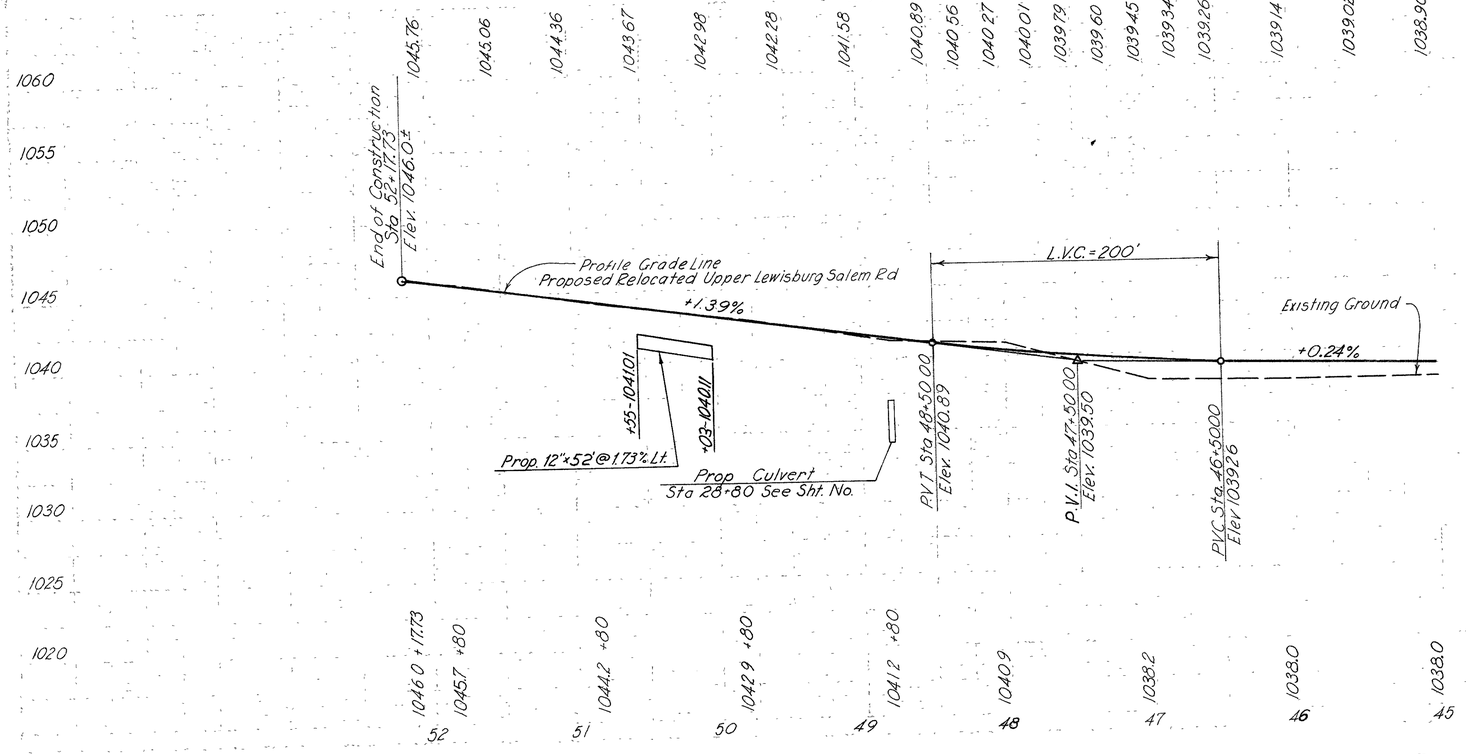
MONTGOMERY COUNTY

MOT. 40-2.73

Relocated Upper Lewisburg Salem Road
CURVE DATA

P.I.	= Sta. 48+37.53
Δ	= 28°38'11"
Δ_c	= 4°38'11"
D_c	= 8°00'00"
L_s	= 300'
Θ_s	= 12°00'00"
P	= 5.23'
K	= 149.78'
X_c	= 298.69
Y_c	= 20.88'
L.T.	= 200.46'
S.T.	= 100.42'
L.C.	= 57.95'
R_c	= 716.20'
T_s	= 333.91'
E_s	= 28.36'
S.E.	= 0.083'/ft.



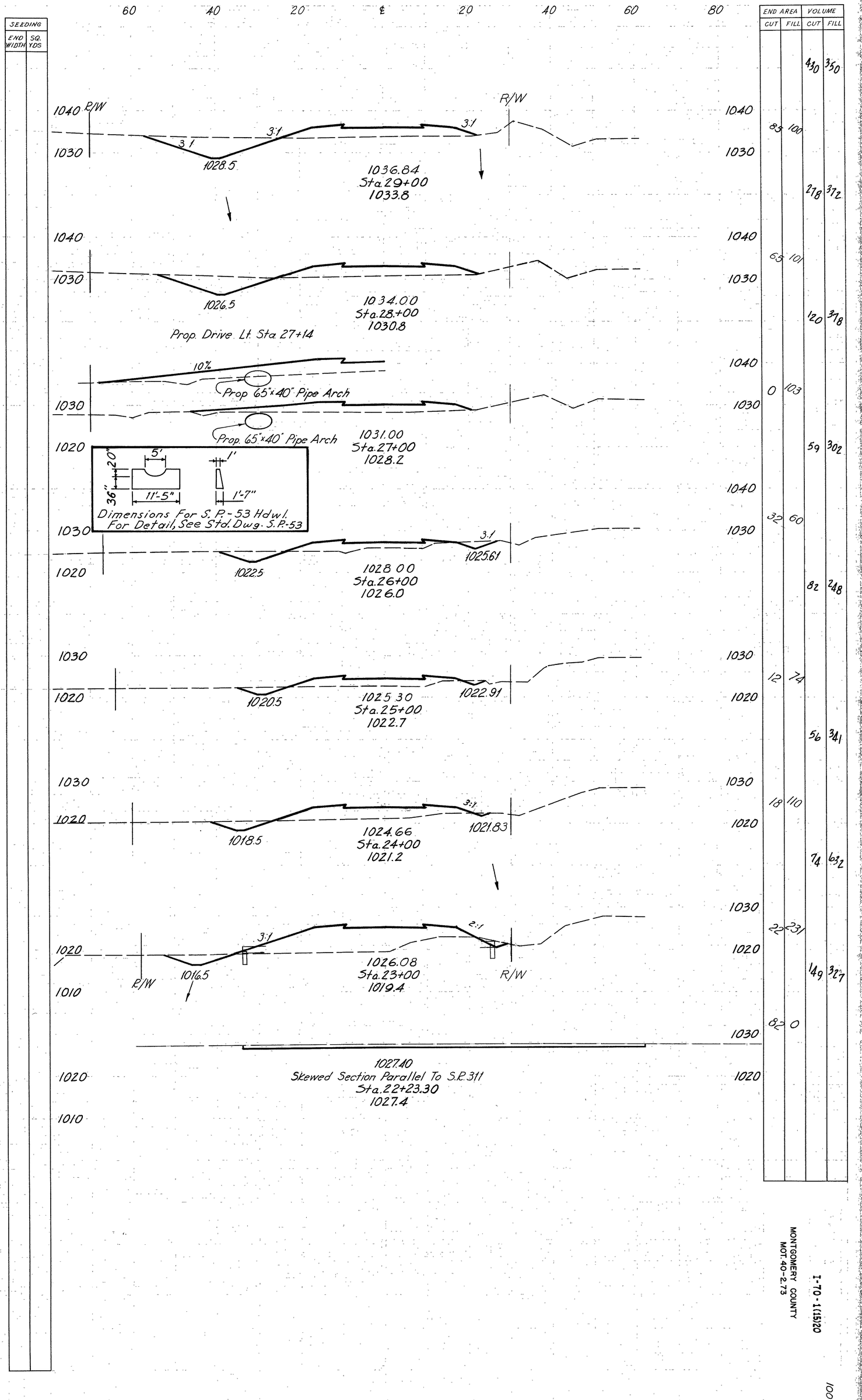


ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 M-6.6(10) M-6.8(10) 24" L.F.	I-1 Pipe Class E1 8" 12" L.E. L.F.	I-10 Dumped Rock 18" C.Y.	B-19 Aggregate Base Course 5" 8" C.Y. C.Y.	T-35 Asphaltic Concrete Surface Course 1½" (Type 1 Comb.) C.Y.	E-12 Pipe Removed 15" and under L.F.	I-15 (Guard Rail Steel Beam Type Std L.F.	I-2 Masonry Head-walls Sta.#23 C.Y.	I-8 Catch Basins Sta.#23 Ea.
		L&R	66	10	4.3					-41	1
1-D	48+80	L&R									
2-D	50+08 - 50+54	L		52							
3-D	Cul de Sac	R		36					50		
4-D	Cul de Sac	R		36							
1-A	50+30	L			99		4.0				
2-A	8+10 - 3+21.5	L&R			1767		44.2				
3-A	Cul de Sac	R			59		2.4				
4-A	Cul de Sac	R				7.1	956	23.9			
5-A	Cul de Sac	R				99	4.0				
6-A	Connector	R				2.3	1.7				
7-A	50+00	L						20			
1-R	11+00	L&R							50		
1-G	Cul de Sac										
			66	10	124	4.3	28.0	2754	80.2	20	50	41	1

RELOCATED UPPER LEWISBURG SALEM RD.

Sta. 45+00 To Sta. 52+17.73

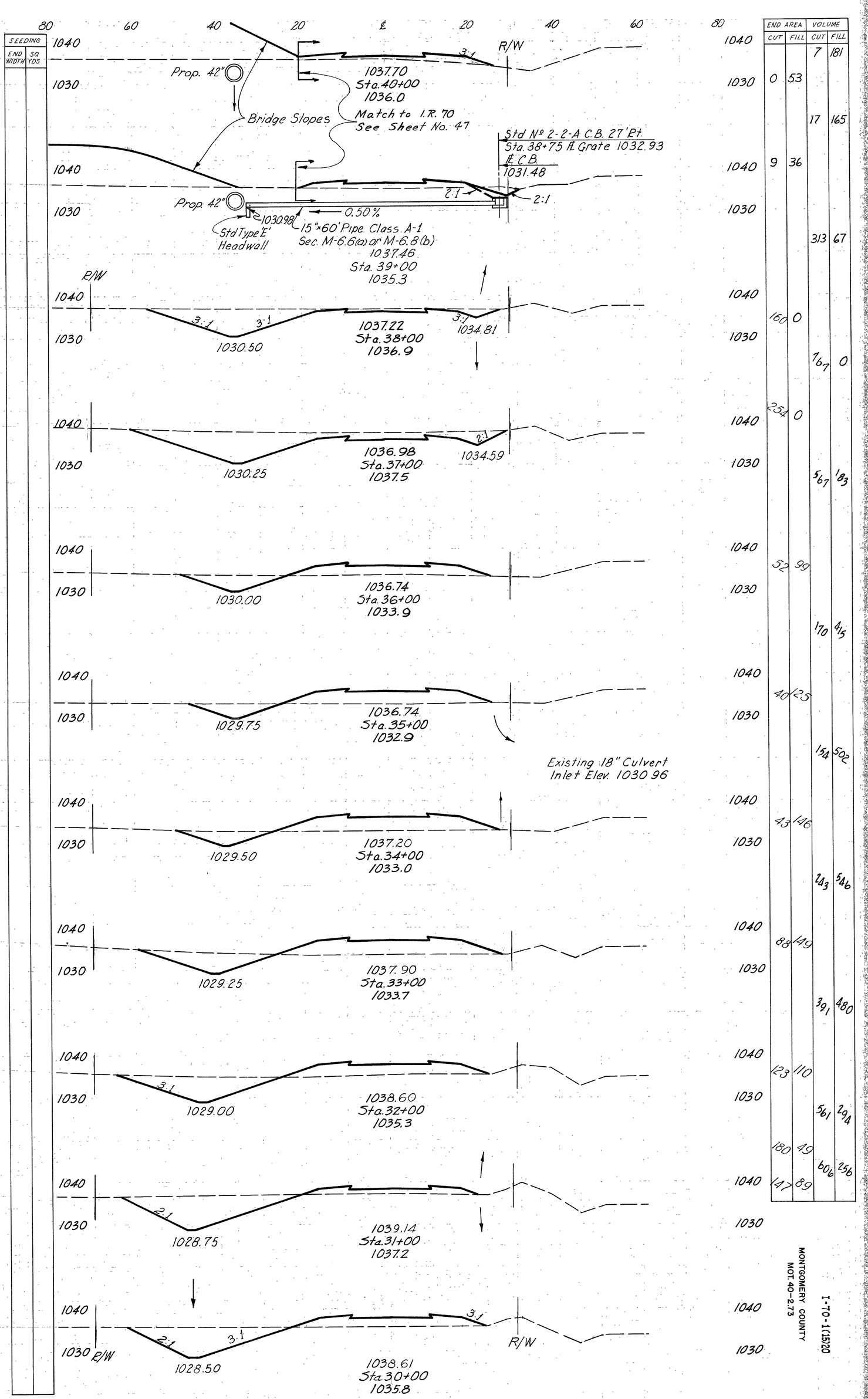


RELOCATED UPPER LEWISBURG SALEM RD.
Sta. 22+23.3 To Sta. 29+00

MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(15)20

100



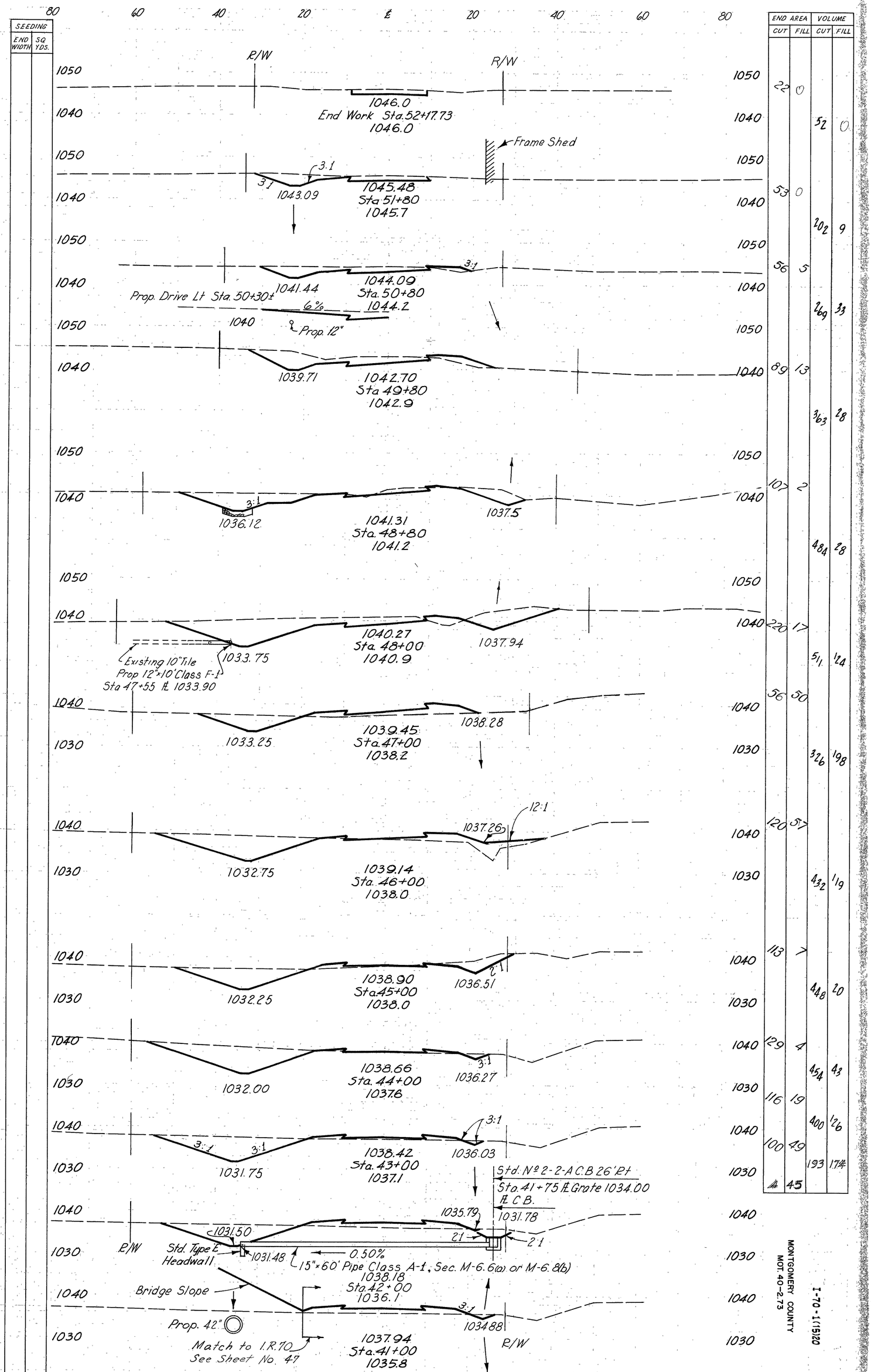
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		7	181
0	53		
		17	165
9	36		
		313	67
160	0		
		167	0
254	0		
		567	183
52	99		
		170	415
40	125		
		154	502
43	146		
		243	546
88	149		
		391	480
123	110		
		561	294
180	49		
		606	256
147	89		

RELOCATED UPPER LEWISBURG SALEM RD.
Sta. 30+00 To Sta. 40+00

MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(15)20

101



RELOCATED UPPER LEWISBURG SALEM RD.
Sta 41+00 To Sta. 52+17.73

MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(115)20

102

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

103

MONTGOMERY COUNTY
MOT. 40-2.73

N

For Ramp 'A'	Sht Nº
Plan & Profile	108 & 109
'X'-Sections	110 & 111

Ramp "A" Sta. 0+00.00
Ramp "C" Sta. 16+33.53
℄ S.R. 311 Sta 41+53.00

For Intersection Details
See Sht. Nº 123

For Ramp 'C'	Sht Nº
Plan & Profile	115
'X'-Section	118

I.P. 70 Sta. 177+19.27
S.R. 311 Sta. 35+22.60

See Note Below for work in this area

For Ramps A & B Nose Details
See Sht. Nº 121

℄ RAMP "A"

℄ RAMP "C"

Ramp 'C' Nose
Sta. 7+99.06

See Note Below for work in this area

For Ramps C & D Nose Details
See Sht. Nº 122

Ramp 'C' Nose
I.P. 70 Sta 188+61.34

Ramp 'D' Nose
I.P. 70 Sta. 188+00

Ramp 'B' Nose
I.P. 70 Sta 165 81.30

℄ I.R. 70

Bridge Nº Mot. 40-0336

Bridge Nº Mot 40-0344

See Note Below for work in this area

℄ S.R. 311

℄ RAMP "B"

℄ RAMP "D"

Ramp 'B' Nose
Sta. 7+99.06

Ramp 'D' Nose
Sta 15+51.36

I.P. 70 Sta 181+50
Relocated Wolf Creek
Sta. 10+00

For Ramp 'B'	Sht Nº
Plan & Profile	112
'X'-Section	113 & 114

For Relocated Wolf Creek	Sht. Nº
Plan & Profile	125
'X'-Sections	126 & 127

Ramp "D" Sta. 0+00.00
Ramp "B" Sta 16+26.00
℄ S.R. 311 Sta. 28+79.00

For Intersection Details
See Sht. Nº 123

Relocated Wolf Creek

For Ramp 'D'	Sht. Nº
Plan & Profile	117
'X'-Section	118, 119 & 120

For S.R. 311	Sht. Nº
Plan & Profile	103A & 104
'X'-Section	105, 106 & 107

For Aux. 'X'-Sections
See Sht. Nº 124

Note: Areas bounded by construction limits within the Interchange shall be graded, shaped to drain and seeded. Payment for this to be included in the unit price bid for Item L-9 seeding and protecting.

S.R. 311 SCHEMATIC & GRADING PLAN

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

UPPER LEWISBURG – SALEM ROAD

BEGIN WORK STA. 24+35

Existing ROW Line

Dayton Power & Light Co

Frame Barn · 2 Story Frame Res · Porch · Frame Chicken House · Shrubs · 15" Pear · 24" Pear · 4" Tree · 15" Tree · 8" Tree · 1½ Sty Brick Residence · Anchor · Service Pole · Gravel Drive · 4×5 Cistern · Existing ROW Line · 10" Locust · 4" Tree · Bush · 5" Pine · 15" Locust · Shrub · Pole · 8" Locust · 1½ Sty. Brick Residence · 2' Conc. Walk · 3" Maple · 3" Pine · 10" Locust · 8" Locust · Shrub · Shrubs

Sta 28+79.30 S R 311 ≙ Sta. 0+00.00 Ramp "D" ≙ Sta 16+26.00 Ramp "B"

6" Gas Line

Feather to meet Existing Pavement

General Telephone Co.

Ramp "B"

Exist. 10" Tile to be Abandoned

Gravel Drive

Radial Section

Exist. 4" Tile

Special Sodding

Inlet

Exist. 8" Tile to be Abandoned

Match Line

N 87°55'35" E

S 69°49'59" E

N 1°14'29" W

N 2°04'25" W

Anchor · Black Top · M.B. · M.B. · Existing R.O.W Line · 12" Conc. Pipe · 4" Wild Cherry · Conc. Post · 6" Maple · 4" Maple · 10" Tree · 10" Maple · 6" Oak · 6" Tree · Anchor · 6" Maple · Light · 8" Maple · 2 Sty. Brick Res

PROPOSED ℄ S.R. 311

180°49'56"

Exist. 8" Tile

18" V.S.P.

10" V.S.P.

Dayton Power & Light Co.

Special Sodding

Radial Section

Exist. 10" Tile to be Abandoned

Small Pines & Tulip Poplars

6" Gas Line

℄ Upper Lewisburg Road (Orig Trav)

Conc. B.M. "120 Punch Mark

R.R. Spike 24+67.18 ℄ 311 11+31.33 Tℓ

Tab in Stump

Tab in D.P.&L. Pole #130845

3926' · 3855' · 3795'

℄ S.R. 311

P.C. Sta. 1+28.78

P.I. 1

Ramp "D"

N 87°55'35" E

℄ S.R. 311 STA. 35+22.60 ≙
℄ I.R. 70 STA. 177+19.27

℄ I.R. 70 Eastbound

			I-1 Pipe			I-2		I-8	E-12	I-15	L-10	L-10	E-3	
			Class A-1 (1-C.F.(b) / 11-C.F.(b))		Class F-1	Masonry Headwalls		Catch Basins	Pipe Removed Over 15'	Guard Rail	Sodding Special Beam & Slope Prot.	Sodding	Channel Exc	Drawing Reference Sheet No.
			21"	24"	10	A	E	*2-2A	18	STD				
			L.F.	L.F.	L.F.	C.Y.		E.A.	L.F.	L.F.	S.Y.	S.Y.		
1-D	26+66	L&R	90		10		36	1						172
2-D	30+00	L&R		110		10.8						5.8	20	172
3-D	32+99 & 33+35	L&R									77			
1-G	27+50 - 28+72	L								175				
2-G	29+05 - 33+03	L								450				
3-G	26+00 - 28+50	R								250				
4-G	29+45 - 33+35	R								387.5				
1-R	26+83	L&R							40					
			90	110	10	10.8	36	1	40	1262.5	77	5.8	2.0	

PROPOSED STRUCTURE
BRIDGE MOT-40-0336

Type: 4-span continuous steel girders with reinforced concrete deck & reinforced concrete substructure.
Spans: 76'-6"; 109'-4" & 109'-4"; 76'-6" c. to c bearings.
Roadway. 30'-0" with 2'-3" safety curbs.
Load Frequency: C F = 130 (37).
Skew: 41° 48' 34" Rt Forward.
Wearing Surface: ¾" Monolithic Concrete.
Approach Slabs: A.S 1-54 (25' Long)
Alignment: Tangent.

1029.36 · 1029.54 · 1029.82 · 1030.21 · 1030.70 · 1031.29 · 1031.99 · 1032.79 · 1033.70 · 1034.69 · 1036.65 · 1038.49 · 1039.36 · 1040.20 · 1041.01 · 1041.79 · 1042.53 · 1043.25 · 1043.93 · 1044.59 · 1045.21 · 1045.80 · 1046.36 · 1046.89 · 1047.38 · 1047.85 · 1048.28 · 1048.69 · 1049.06 · 1049.40 · 1049.71 · 1049.99 · 1050.23 · 1050.45 · 1050.63 · 1050.79 · 1050.91 · 1051.00

1029.46 · 1029.32 · 1029.29

L.V.C. = 300'

Begin Construction P.V.C. Sta. 24+35 Elev. 1029.54

P.V.I. Sta. 25+85 Elev. 1028.09

P.V.T. Sta. 27+35 Elev. 1034.09

P.V.C. Sta. 27+60 Elev. 1035.10

Ramp Terminals Sta 28+79.30 Elev. 1039.52

Profile Grade Line Proposed I.R. 70

+4.00%

L.V.C. = 1400'

P.I. Sta. 34+60 Elev. 1063.09

P.T. Sta. 34+60

Existing Ground

-1.00%

6" Gas Line Top El. 1025.7

Prop. Culvert Sta 26+66 See Sht No 174

1023.79 18" C.M.P. 1020.35

Prop. Culvert Sta. 30+00 See Sht No 175

8" Tile Lt. 1025.5

1022.69 10" C.M.P.

1030.3 · 1030.7

Critical Clearance 16'-4 ¾"

℄ Intersection S.R. 311 & Upper Lewisburg-Salem Road Sta. 24+67.18

1050 · 1045 · 1040 · 1035 · 1030 · 1025 · 1020

1028.3 · 1028.5 · 1027.9 · 1027.8 · 1027.7 · 1027.6 · 1027.7 · 1028.3 · 1028.9 · 1028.7 · 1028.5 · 1028.5 · 1028.7 · 1029.2 · 1029.7 · 1029.5 · 1029.5 · 1029.6 · 1029.9

20 · 21 · 22 · 23 · 24 · 25 · 26 · 27 · 28 · 29 · 30 · 31 · 32 · 33 · 34 · 35

Excavation 1135 C.Y.
Embankment 29190 C.Y.
Embankment +12% 32693 C.Y.

S.R. 311

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees & Stumps To Removed
24"-30" 1

Ramp "A"
Westbound
℄ S.R 311 STA. 35+22.60
℄ I.R. 70 STA. 177+19.27
℄ I.R. 70
Special Sodding
Exist 12" Tile (To be removed) Inlet
Radial Section
Exist 8" Tile (To be Removed)
N 67°55'35" E
L/A
R/W
Exist 6" Tile
Proposed & Relocated Wolf Creek See Sht. N°125
Sta. 41+53.00 - S.R. 311
Sta. 0+00.00 - Ramp "A"
Sta. 16+33.54 - Ramp "C"
Guard Rail
70°
Exist. 10" Tile (To be Removed)
Special Sodding
Exist. C.B.
Exist. 15" Tile (To be removed)
See Note
Radial Section
Drilled Well
Black-Top Drive
1 Sty. Brick Residence-Basement
Septic Tank
Brick Garage
Wolf Creek - N Branch
Existing Channel to be backfilled
Gravel Drive
Match Line
N 46°07'01" E
RAMP "C"
N 87°55'35" E
B.M. #159
S.E Cor of Conc. Footer For Stone Wall S.Side Blk Top Drive.
175' Lt. Sta. 179+00
Elev. 1025.85
Frame Barn
Frame
Frame Garage
10' Gravel Road
2 Sty. Frame
Corn Crib
Frame Shed
24" Catalpa
2-12" Trees
50' Lt. ℄ Gr. Dr.
Residence Dr. 32' Lt.
Wood Porch
Exist. 8" Tile
End Work Sta. 47+55
Opening to 8" Tile
Existing R.O.W.
24" Tree
24" Maple
12" C.M.P.
10" C.M.P. (To be abandoned)
M.D.
C.B.
PROPOSED ℄ S.R. 311
Existing R.O.W.
Residence Dr. 32' Rt.
Hub in Fence
I.P. 49+00.00
℄ S.R 311
26.25'
45°
23'
3.88'
Hub in Fence

Note 1-R Existing Sectional Plate metal Structure shall be removed, match-marked, reduced to component members and Stored for salvage by State Forces in accordance with Item S-24.

Note 3-D See Sheet Nos. 173 & 174 for Quantities for this item.

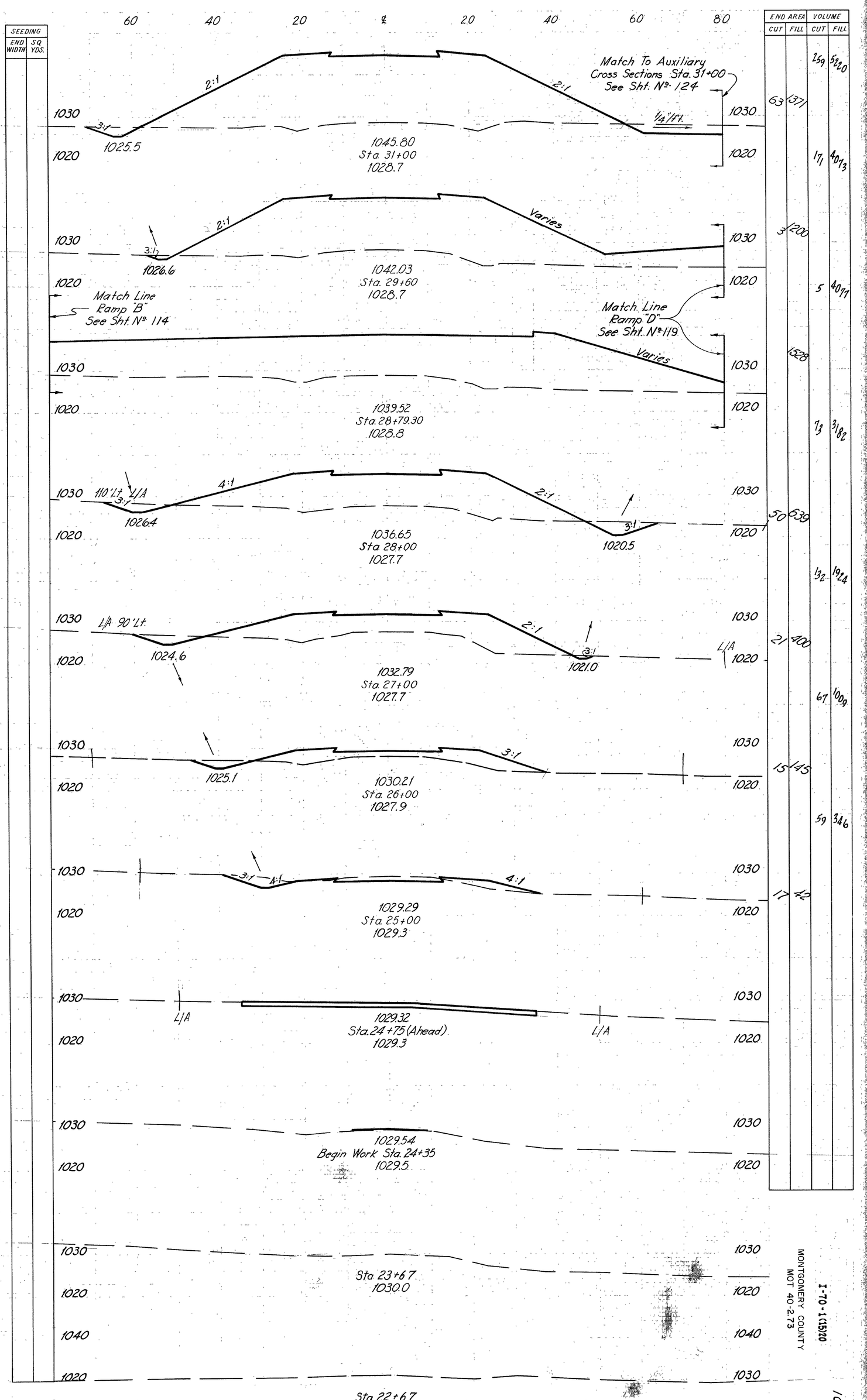
Excavation	1088 C.Y.
Embankment	47,851 C.Y.
Embankment + 12 %	53,593 C.Y.

Profile Grade Line Proposed I.R. 70
Ramp Terminal Sta 41+53.00 Elev. 1042.30
P.V.T. Sta. 41+60 Elev. 1042.09
P.V.C. Sta. 44+05.00 Elev. 1034.74
End Construction Sta 47+55.00 Elev. 1030.37
L.V.C. = 1400'
L.V.C. = 350'
3.00%
+0.46%
Existing Ground
Prop. Culverts Sta. 41+35 & Sta. 40+50 See Sht. No. 176 & 177
Exist. 10.5' x 7.0' Multi-Plate Arch.
10" Tile Rt.
12" Tile
1024.53'
1022.98'
1020.76'
1019.48'
1016.31'
1016.50'
1016.30'
1016.72'
10" C.M.P. Rt.
1024.68'
1024.35'
12" C.M.P. Lt.
1027.63'
1027.15'
+82 - 1026.64
+22 - 1027.04
12" @ 1.00%
8" Tile
Lt. 1025.42
Rt. 1026.09

ESTIMATED QUANTITIES

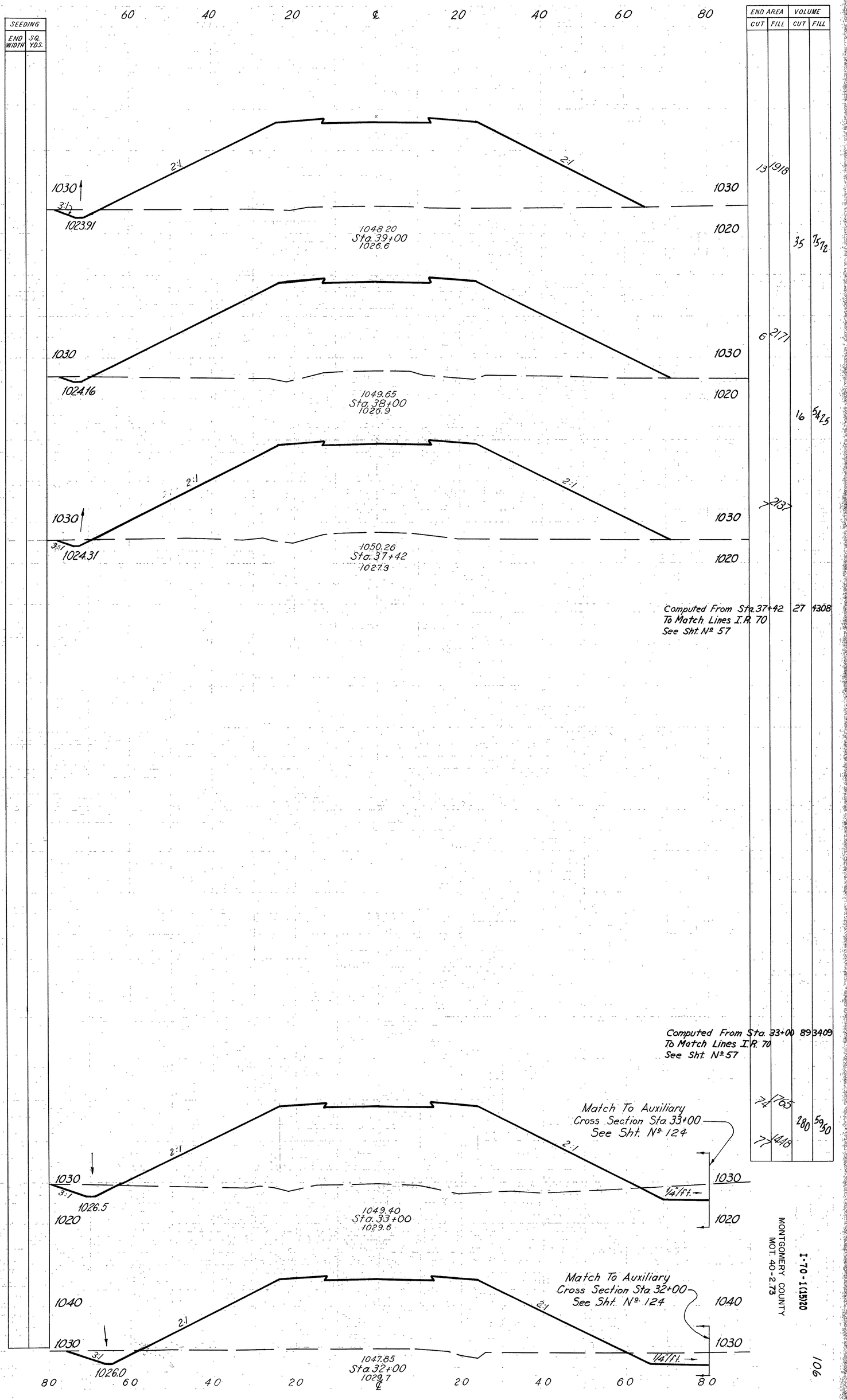
REF. NO.	STATION TO STATION	SIDE	SPECIAL Drilled Wells Abandoned EACH	Pipe Class F-1 12" L.F.	Drawing Reference Sheet No.	S-24 Removal of Existing Structures Lump	B-19 Aggregate Surface Course 3" S.Y.	T-35 Bituminous Concrete Base Course 3" Type C S.Y.	L-10 Seeding & Mulching (70-30) S.Y.	I-15 Guard Rail Steel Beam Deep Type Std.	E-12 Pipe Removed Steel Beam Deep Type Under Fill L.F.	I-15 Guard Rail Steel Beam Deep Type Std.
1-D	37+15 & 37+51	L&R							96			
4-R	38+10 - 40+15	L&R				Lump	4	4			460	
5-R	44+80 - 45+00	L					9.9	9.9			20	
4-D	44+82 - 45+22	L		40			1.8	4.5				
1-G	37+15 - 40+87	L					4	9.9		375		
2-G	41+84 - 43+45	L					4.6	11.5		1625		
3-G	37+51 - 41+08	R								362.5		
4-G	42+00 - 43+47	R								150		
1-A	44+75 -	L										
3-R	38+40	R	1									
6-A	46+20	R										
4-A	45+80	L										
5-A	46+92	R										
1-R	40+50	L&R										
2-R	39+82 - 41+25	L&R	1	40								
						Lump	14.4	35.8	96	2162.5	480	1050.0

S.R.311
STA. 35+22.60 TO STA. 50+00



I-70-1(115)20
MONTGOMERY COUNTY
MOT 40-2.73

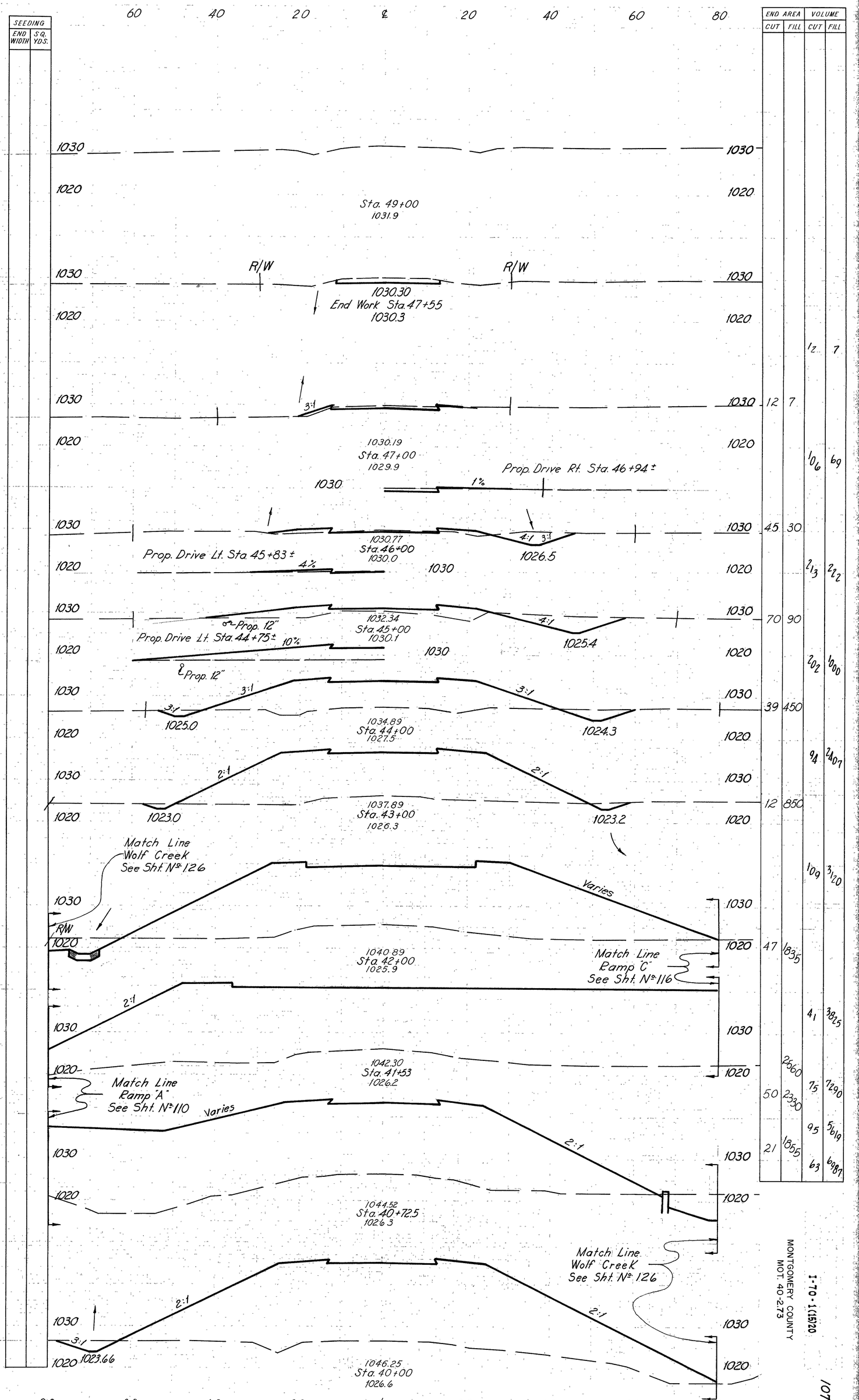
105



MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(15)20

106



MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(15)20

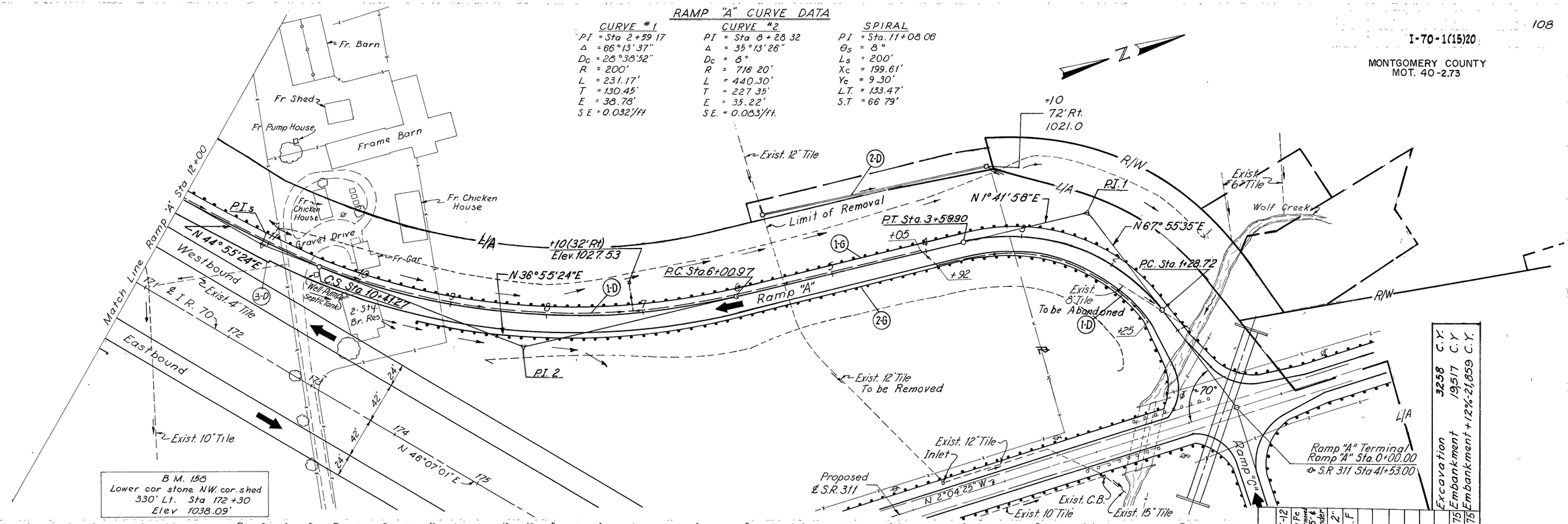
107

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

RAMP "A" CURVE DATA

CURVE #1	CURVE #2	SPIRAL
PI = Sta 2+59.17	PI = Sta 8+28.32	PI = Sta. 11+08.06
Δ = 66°13'37"	Δ = 35°13'26"	θ_s = 8°
Dc = 28°38'52"	Dc = 8°	L_s = 200'
R = 200'	R = 716.20'	X_c = 199.61'
L = 231.17'	L = 440.30'	Y_c = 9.30'
T = 130.45'	T = 227.35'	L.T. = 133.47'
E = 38.76'	E = 35.22'	S.T. = 66.79'
S E = 0.032'/ft	S.E. = 0.063'/ft.	



REF. NO.	STATION TO STATION	SIDE	Class A-1 M-6.6(b) or M-6.8(b) 6" L.F.	Class H-2 15" L.F.	I-1 Pipe Class F-1 8" L.F.	I-1 Pipe Class F-1 15" L.F.	Class 1-3 6" Underdrains Shallow L.F.	I-8 Catch Basin Std. 228 EA.	I-5 Pipe Specials Class Class I-3 A-1 6" EA.	I-5 6"-60° Bend EA.	I-15 Guard Rail Steel Beam Guard Standard L.F.	I-12 Special Concrete Curb L.F.	E-12 Pi. Pe Remove 15" & Under 1.2" L.F.	E-12
1-D	1+25 - 12+00	L&R	24	238	10	44	1041			1	2			275
2-D	3+30 - 5+57	R						2				235		
3-D	9+65 - 12+00	R												
1-G	0+00 - 12+00	R										1225		
2-G	0+45 - 9+33	L										88.75		
1-R	5+57 - 4+65													275
			24	238	10	44	1041	2	1	2	2100	235	275	E

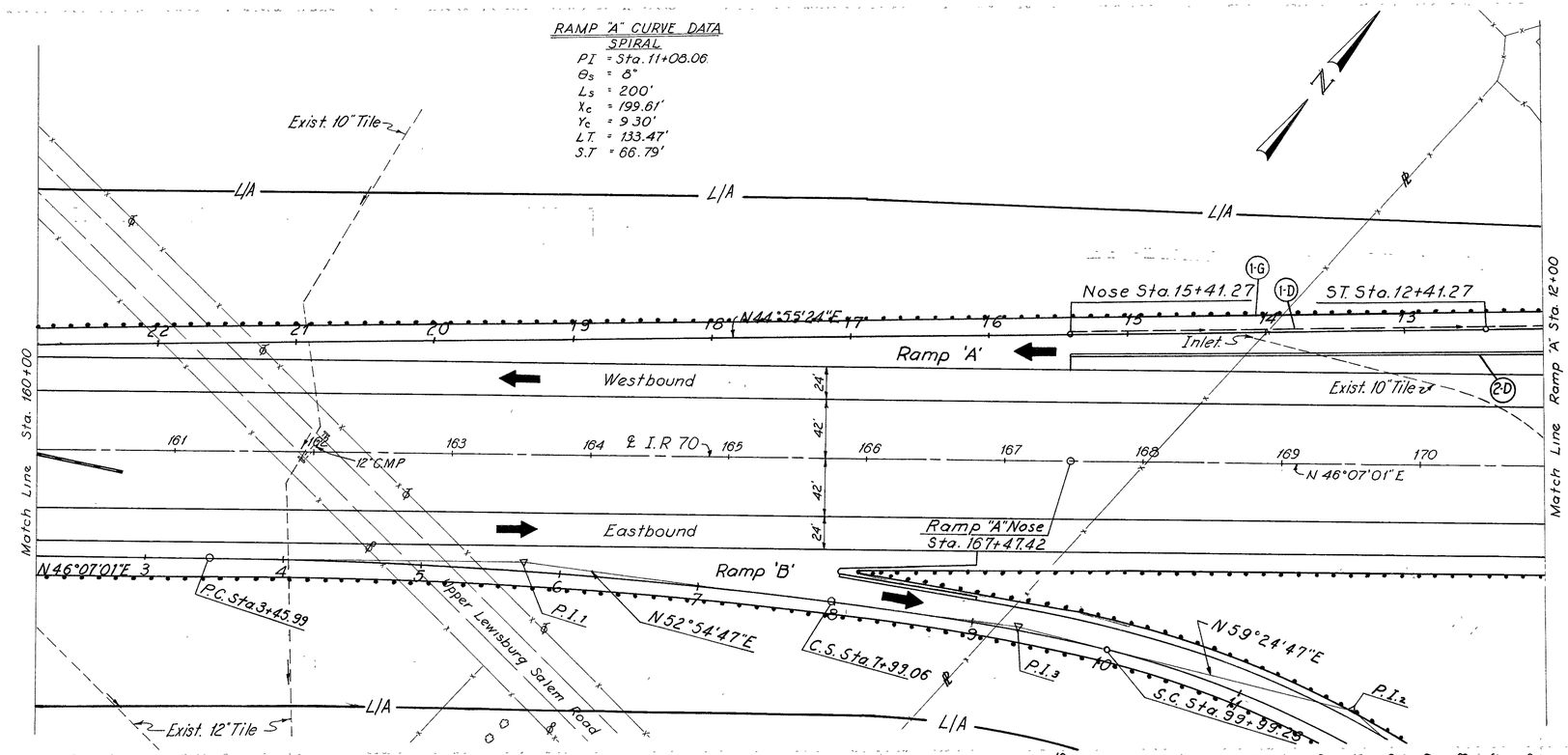
Excavation	3258 C.Y.
Embankment	19517 C.Y.
Embankment +12%-21,859 C.Y.	

S.R. 311 INTERCHANGE - RAMP "A" Sta. 20+00 To Sta. 40+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

RAMP "A" CURVE DATA
SPIRAL
PI = Sta. 11+08.06
Θ_s = 8°
L_s = 200'
X_c = 199.61'
Y_c = 9.30'
L.T. = 133.47'
S.T = 66.79'

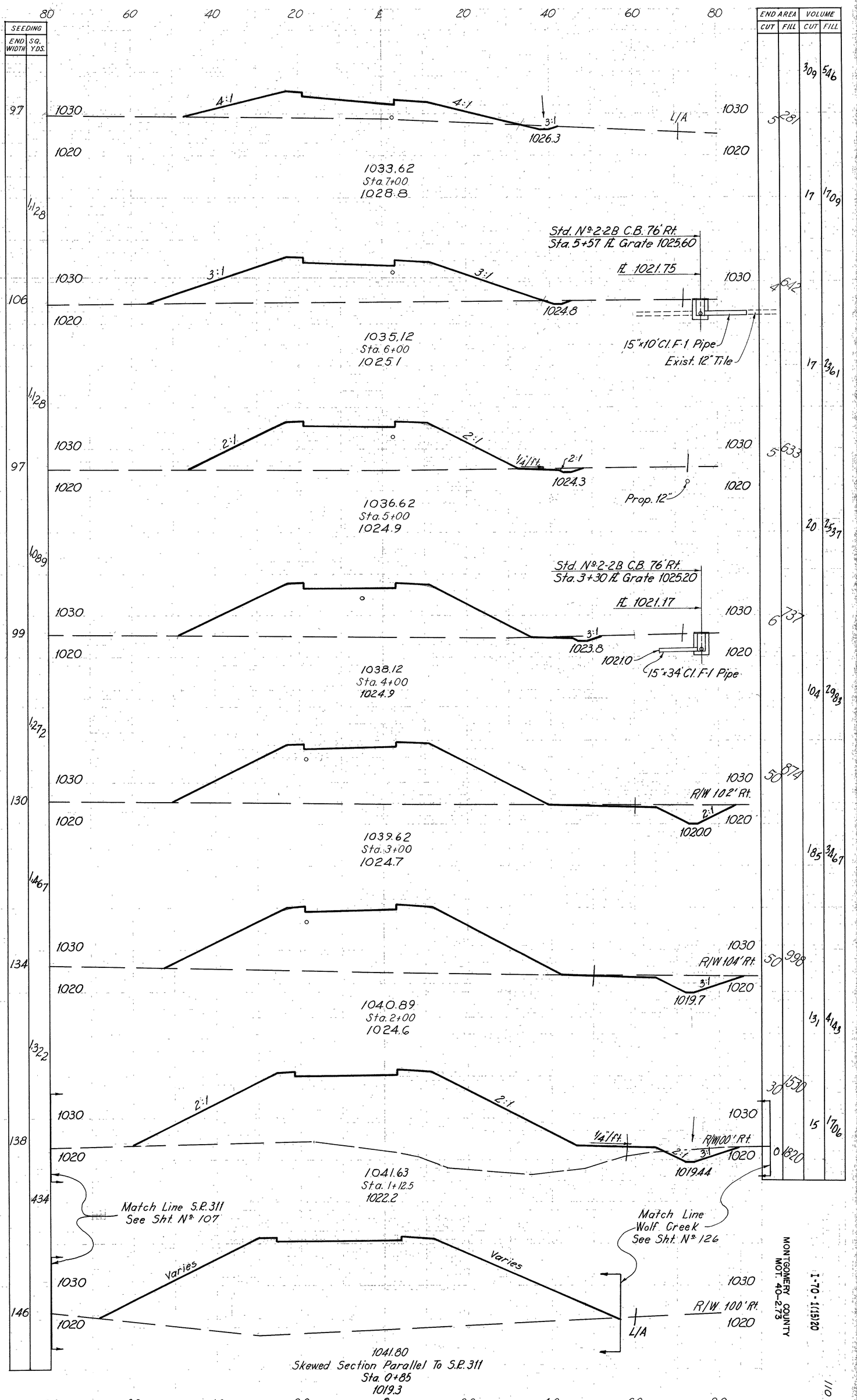


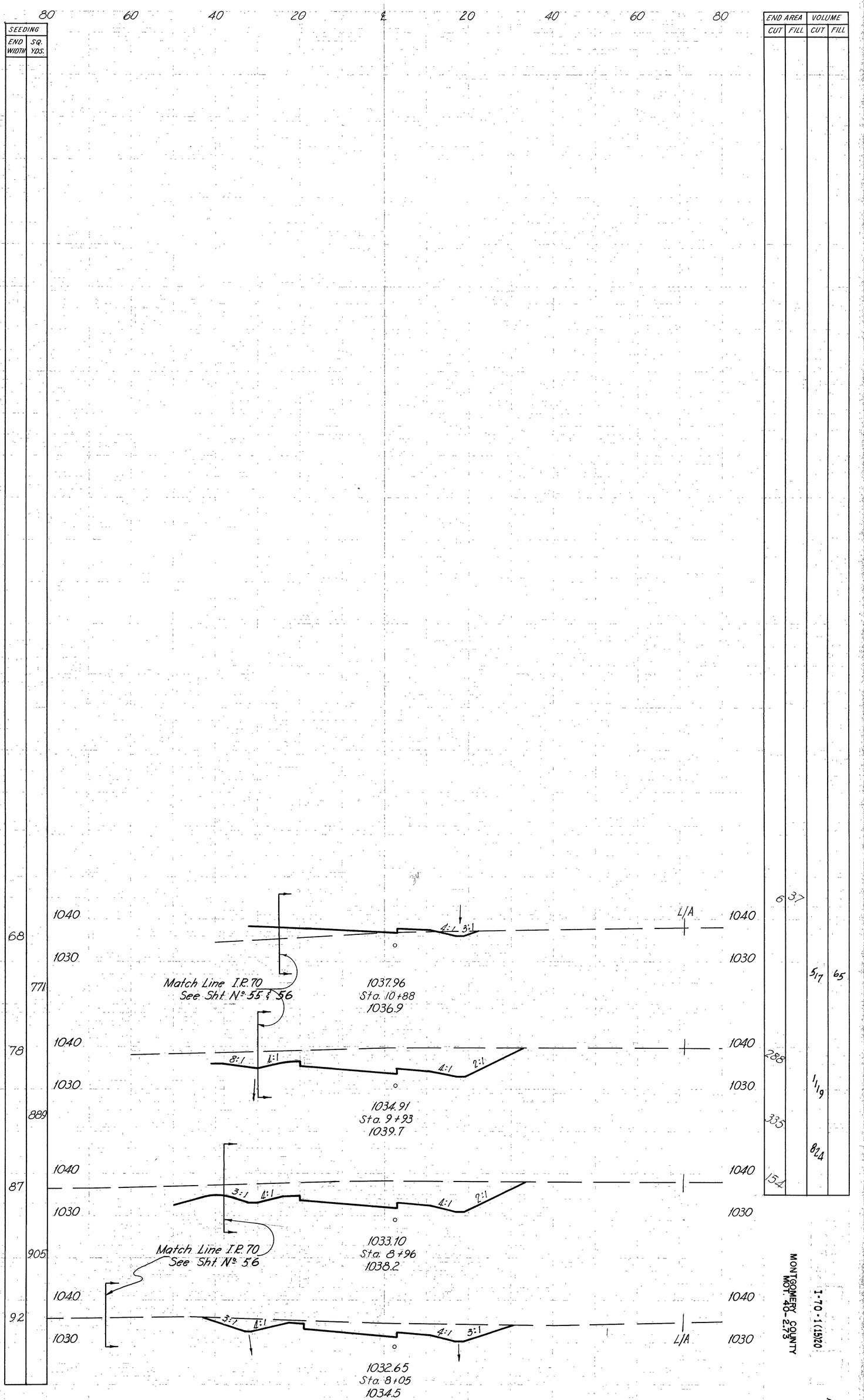
ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Class I-3 Underdrains 6" Shallow L.F.	I-1 Class I-3 Underdrains 6" Deep L.F.	I-15 Guard Rail Steel Beam TYPE Std.	I-12 Special Conc. Curb L.F.
1-D	12+00 - 15+41	R	341			
2-D	12+00 - 15+41	L				341
1-6	12+00 - 15+41	R			337.5	
			341		337.5	341

Excavation
Embankment
Embankment +12%

S.R. 311 INTERCHANGE - RAMP "A" Sta. 12+00 To Sta. 22+87


80 60 40 20 ℄ 20 40 60 80
SEEDING
END WIDTH
SQ. YDS.
END AREA
CUT FILL
VOLUME
CUT FILL
97
1030
1020
4:1
4:1
3:1
1026.3
L/A
1033.62
Sta. 7+00
1028.8
1/1/28
106
Std. N° 2-2B C.B. 76' Rt.
Sta. 5+57 ℄ Grate 1025.60
℄ 1021.75
3:1
3:1
1024.8
15"x10' Cl. F-1 Pipe
Exist. 12" Tile
1035.12
Sta. 6+00
1025.1
1/1/28
97
2:1
2:1
1/4/ft.
2:1
1024.3
Prop. 12"
1036.62
Sta. 5+00
1024.9
10/89
99
Std. N° 2-2B C.B. 76' Rt.
Sta. 3+30 ℄ Grate 1025.20
℄ 1021.17
3:1
1023.8
1021.0
15"x34' Cl. F-1 Pipe
1038.12
Sta. 4+00
1024.9
12/72
130
R/W 102' Rt.
2:1
10200
1039.62
Sta. 3+00
1024.7
14/67
134
R/W 104' Rt.
3:1
1019.7
1040.89
Sta. 2+00
1024.6
13/22
138
2:1
2:1
1/4/ft.
R/W 100' Rt.
2:1
3:1
1019.44
1041.63
Sta. 1+12.5
1022.2
434
Match Line S.P. 311
See Sht. N° 107
Match Line
Wolf Creek
See Sht. N° 126
146
Varies
Varies
R/W 100' Rt.
L/A
1041.80
Skewed Section Parallel To S.P. 311
Sta. 0+85
1019.3
℄
5 281
309 546
17 1709
4 642
17 1361
5 633
20 2537
6 737
104 2983
50 874
185 3467
50 998
131 4143
30 1530
15 1706
0 1820
MONTGOMERY COUNTY
MOT. 40-2.73
I-70 - 115120
110


80 60 40 20 ℄ 20 40 60 80
SEEDING
END WIDTH
SQ. YDS.
END AREA
CUT
FILL
VOLUME
CUT
FILL
68
78
87
92
771
889
905
1040
1030
4:1
3:1
8:1
1:1
2:1
L/A
Match Line I.P. 70
See Sht. No. 55 & 56
1037.96
Sta. 10+88
1036.9
1034.91
Sta. 9+93
1039.7
1033.10
Sta. 8+96
1038.2
Match Line I.P. 70
See Sht. No. 56
1032.65
Sta. 8+05
1034.5
6
37
288
335
154
517
65
1119
804
MONTGOMERY COUNTY
MONT-28-2.23
I-70-1(15)20
111

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

6"Gas Line
Dayton Power & Light Co.

Exist. 10" Tile

Ramp 'A'

Westbound

℄ I.R. 70

Ramp 'B' Nose
Sta. 165+81.30

Eastbound

Ramp 'B'

N 52°54'47"E Ramp 'B'

C.S Sta. 7+99.06

P.I 1

P.I 2

P.I 3

S.C Sta. 9+99.06

N 59°24'47"E

N 87°55'35"E

P.T. Sta. 13+55.47

Ramp Terminal
Ramp 'B' Sta. 16+26.00
℄ S.R 311 Sta. 28+79.30

Exist. 4" Tile

Exist. 10" Tile

Exist. 6" Tile

Inlet

L N 2°01'25" W

Exist. 10" Tile

Ramp 'D'

Proposed
℄ S.R 311

Excavation 622 C.Y.
Embankment 20312 C.Y.
Embankment +12% 22749 C.Y.

Sta 160+00 Match Line

N 46°07'01"E

P.C. Sta. 3+45.99

This portion of Upper Lewisburg Salem Rd to be removed
E-1-30 C.Y.
L-9-895 Y.

Upper Lewisburg Salem Road

Exist. 12" Tile

Exist. 12" Tile

Gravel Drive

3+68

1032.4

Taper 1:10

30 R

1030.75

30 R

1030.6

1032.4

15'

R/W

R/W

62.5'

12"x60' Cl. F-1 @ 24%

6"Gas Line

Note For Cul-De-Sac Typical
See Sht Nº 99

+62.5 (42' Rt)
Elev. 1029.58

+75

90°

RAMP "B" CURVE DATA

CURVE #1		CURVE #2		SPIRAL	
PI	= Sta. 5+72.80	PI	= Sta. 11+81.04	P.I.	= Sta. 9+32.48
Δ	= 6°47'46"	Δ	= 28°30'48"	Θ_s	= 6°30'00"
Dc	= 1°30'00"	Dc	= 8°	Ls	= 200'
R	= 3819.72'	R	= 716.20'	Xc	= 7.56'
L	= 453.07'	L	= 356.42'	Yc	= 199.74'
T	= 226.80'	T	= 181.98'	LT	= 133.42'
E	= 6.73'	E	= 22.78'	ST	= 66.75'
S.E	= Normal	SE	= 0.083'/ft.		

1065 1060 1055 1050 1045 1040 1035 1030 1025

1055.63 1055.06 1054.46 1053.83 1053.16 1052.46 1051.73 1050.97 1050.18 1049.35 1048.49 1046.74 1044.99 1043.24 1041.49 1040.65 1039.91 1039.28 1038.75 1038.33 1038.02 1037.81 1037.70 1037.70 1037.81 1038.02 1038.33 1039.11

+99.06

Ramp 'B' Nose
I.R. 70 Sta. 165+81.30

Profile Grade Line I.R. 70

For Continuation See
I.R. 70 Sheet Nº 20

Begin Profile Grade
Ramp 'B' Nose
Sta. 7+99.06
Elev. 1055.63

P.V.C. Sta. 8+00.00
Elev. 1055.63

P.V.T. Sta. 9+25.00
Elev. 1052.87

P.V.T. Sta. 10+50
Elev. 1048.49'

I.R. 70
P.V.T. Sta. 169+75
Elev. 1046.10'

P.V.C. Sta. 12+54.99
Elev. 1041.32'

P.V.T. Sta. 14+04.99
Elev. 1036.07'

P.V.T. Sta. 15+54.99
Elev. 1038.41'

End Ramp 'B'
Sta. 16+26.00
Elev. 1039.52'

-2.21%

-3.00%

-3.50%

+1.56%

1051.30'

L.V.C. = 250'

L.V.C. = 300'

Ramp Elevations Derived From ℳ Cross Slopes & Elevations

Typical Shallow Trench
Prop. 6" Underdrains (Cl. I-3 Pipe)

Profile Grade Line
Ramp 'B'

Typical Shallow Trench

-0.24%

+0.24%

Existing Ground

+50 - 1033.35

1029.58'
1033.32'

+62.5

+75 - 1033.35

+75 - 1034.23'

S.R. 311
Sta. 28+79.30

1034.0 1034.5 1034.8 1035.0 1035.0 1035.0 1035.2 1035.3 1035.4 1033.5 1032.3 1032.0 1031.4 1029.8 1030.3 1029.4 1027.9

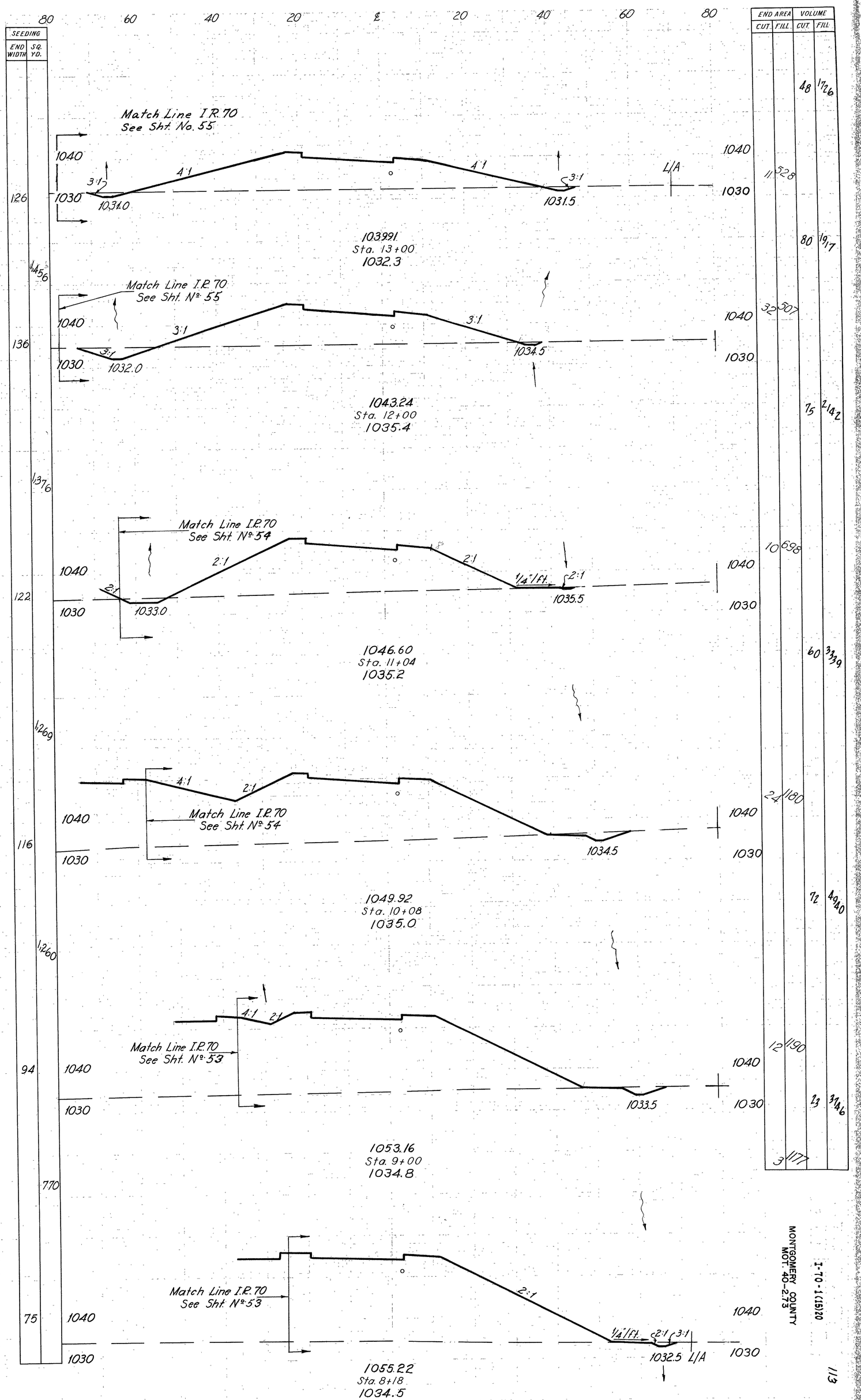
3 4 5 6 7 8 9 10 11 12 13 14 15 16

ESTIMATED QUANTITES

REF. NO.	STATION TO STATION	SIDE	Shallow 6" Class I-3 Underdrain L.F.	8" I-1 Pipe Class I-3 L.F.	12" I-1 Pipe Class I-3 L.F.	Guard Rail Beam Type Class F-1 L.F.	Pipe Shoulder Drain Class I-3 Deep Standard 6" Tee Ea.	Aggregate Base Course 8" C.Y.	1½" Asphaltic Concrete Surface Course Type A (Item 404) C.Y.	I-5	B-19	T-35
1-D	7+99 - 15+75	R	776	10		60	1					
2-D	3+35 - 3+95											
1-G	8+03 - 12+50	R				887.5						
2-G	Cul de Sac					25.0						
1-A	3+68	L&R						46.1	10.1			
			776	10	60	912.5	1	46.1	10.1			

Drawing Reference

S.R. 311 INTERCHANGE - RAMP "B" - Sta. 8+00 To Sta. 16+26.00



S.R. 311 INTERCHANGE RAMP "B" Sta. 8+18 To Sta. 13+00

MONTGOMERY COUNTY
MOT-40-2.73

I-70-1(115)20

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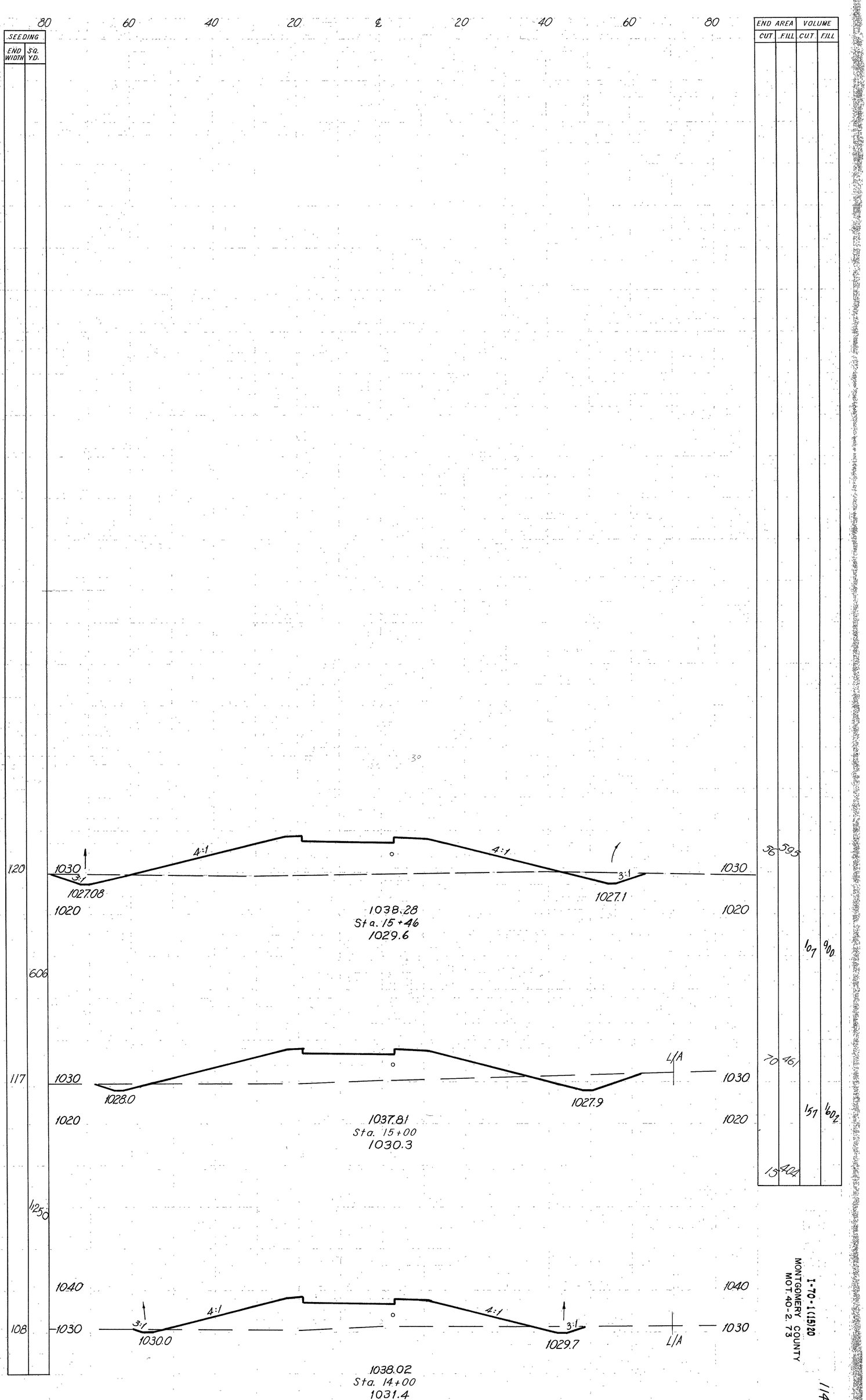

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2. 73

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I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

RAMP "C" CURVE DATA

CURVE #1	CURVE #2	SPIRAL
PI = Sta. 5+72.79	PI = Sta 12+20.26	PI = Sta. 9+65 90
Δ = 6°47'46"	Δ = 26°53'18"	Θ_s = 8°07'30"
D_c = 1°30'00"	D_c = 8°	L_s = 250'
R = 3819.72'	R = 716 20'	X_c = 249.50'
L = 453.07'	L = 336.10'	Y_c = 11.80'
T = 226.80'	T = 171.21'	L.T. = 166.84'
E = 6.73'	E = 20.18'	S.T = 83.50'
S.E = Normal	S.E = 0 083'/ft.	

B.M 161
60d. Spike in S.E. Corn. of Barn
300' Lt. Sta 188+00
El. 1036.05

10" C.M.P.
R/W
L/A
N 67°55'35" E
Ramp Sta. 16+33.53
@ S.R. 311 Sta. 41+53.00
Ramp "C"
N 87°55'35" E
PT Sta. 13+85.16
PI "C" 2
PI "C" 3
+00-34' Pt.
Elev. 1022.39'
SC Sta. 10+49.06
CS Sta. 7+99.06
N 52°54'41" E
PC Sta 3+45.99
PI "C" 4
Exist. 5" Tile
Match Line Sta. 193+19.06
Ramp "C"
Ramp "C" Nose Sta 188+61.34
Westbound
Eastbound
I.R. 70
Ramp "D"
N 61°02'17" E
N 46°07'01" E
Exist. 15" Tile
Exist. 10" Tile
Exist. C.B.
Wolf Creek
Exist. 12" Tile
Exist. 3" Tile
Exist. 6" Tile
Exist. C.B.
1-Sty. Brick Res with Basement
Brick Garage
Black Top Drive
S.R. 311 N 2°04'23" W
2-90°
+75
+00-1029.51'
+00-1022.89'
+20-1024.11'
1022.39'
+00-1023.37'
7+99.06
1023.96'

Excavation	1265 C.Y.
Embankment	1,1184 C.Y.
Embankment +12%	12,526 C.Y.

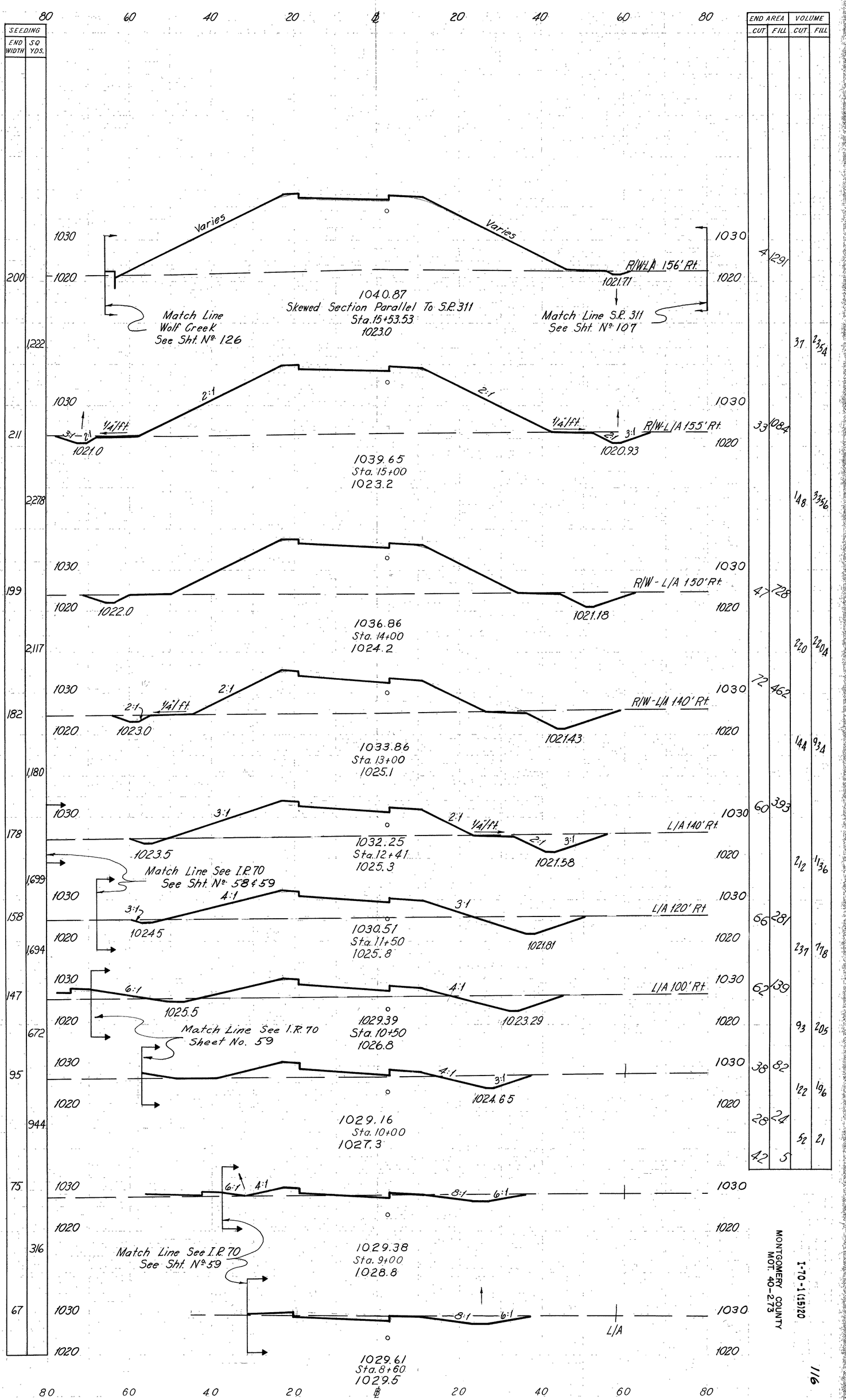
End Ramp "C" Sta. 16+33.53 Elev. 1042.30
P.V.T. Sta. 16+25.00 Elev. 1042.17'
P.V.I. Sta. 15+25.00 Elev. 1040.61'
P.V.C. Sta. 14+25.00 Elev. 1037.61'
+1.56 %
+3.00 %
+75-1036.95'
L.V.C. = 200'
S.R. 311 Sta. 41+53.00
Typical Shallow Trench
Prop. 6" Underdrains (Cl. I-3 Pipe)
Prop. Culvert
Sta 15+25 See Sht Nº 176
Existing Ground
P.V.I. Sta. 13+10.34
Elev. 1034.17'
L.V.C. = 400'
P.V.I. Sta. 11+10.34
Elev. 1028.17'
P.V.C. Sta. 9+10.34
Elev. 1029.33'
Profile Grade Line Ramp "C"
-0.58%
-0.24%
Typical Deep Trench
Ramp "C" Nose I.R. 70 Sta. 188+61.32
Ramp "C" Nose Sta. 7+99.06
Elev. 1029.97'
End Profile Grade
Profile Grade Line I.R. 70
+0.49 %
For Continuation See I.R. 70 Sheet Nº 23
Ramp Elevations Derived From
N Cross Slopes & Elevations

S.R. 311 INTERCHANGE - RAMP "C" Sta. 3+45.99 To Sta 16+33.53

ESTIMATED QUANTITIES

REF. NO	STATION TO STATION	SIDE	I-1 Pipe Class F-1 Underdrains 6"	I-1 Pipe Class F-1 Underdrains 8"	I-21 Median Pavement 4"	I-12 Concrete Curb Std.	I-15 Guard Rail Steel Beam Deep Type	I-5 Pipe Specials I-3 6"x6"x6" Tee
			L.F. Shallow	L.F. Deep	S.Y. Type I	L.F. Type 6	L.F. Standard	Ea.
1-D	7+99 - 15+75	R	10 475	323				1
3-D	7+99 - 9+00	L			14	103		
1-G	12+50 - 16+12	L					375	
2-G	12+50 - 16+05	R					375	
			10 475	323	14	103	750	1

Drawing Reference Sheet No.



MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1 (15)20

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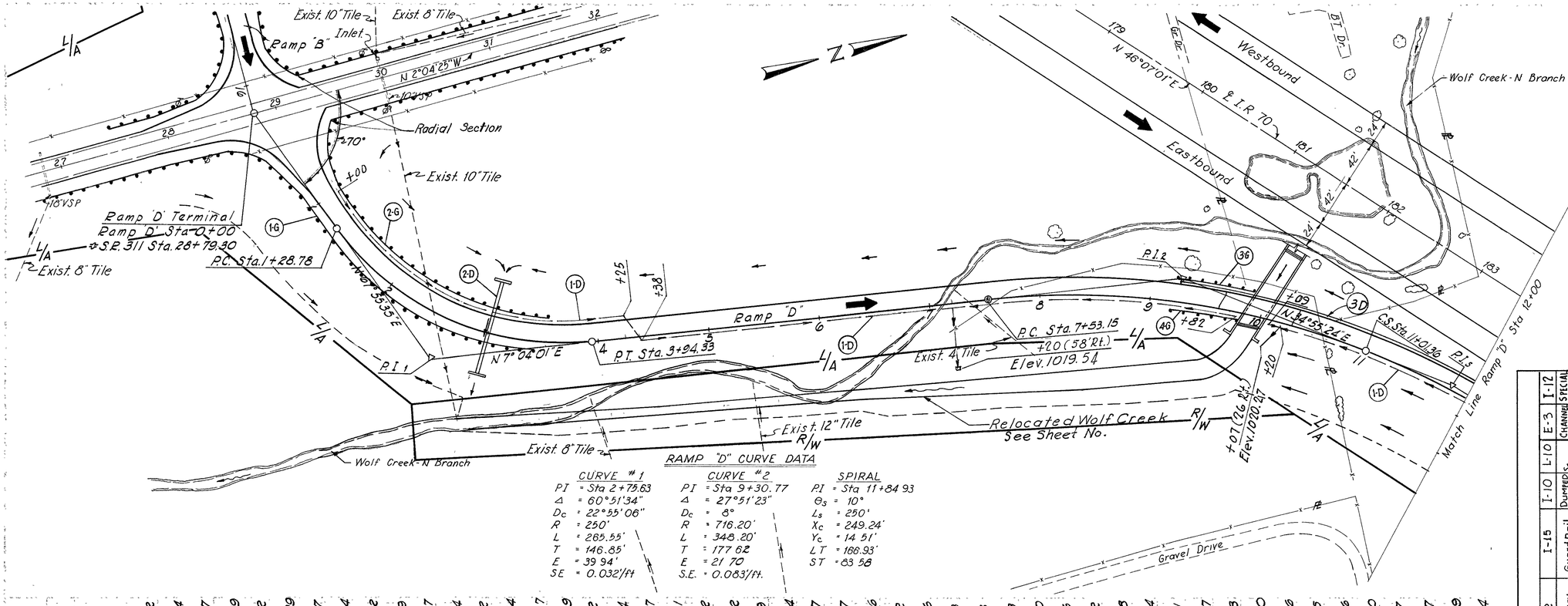
I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Excavation 6160 C.Y.
Embankment 17128 C.Y.
Embankment+12% 19183 C.Y.

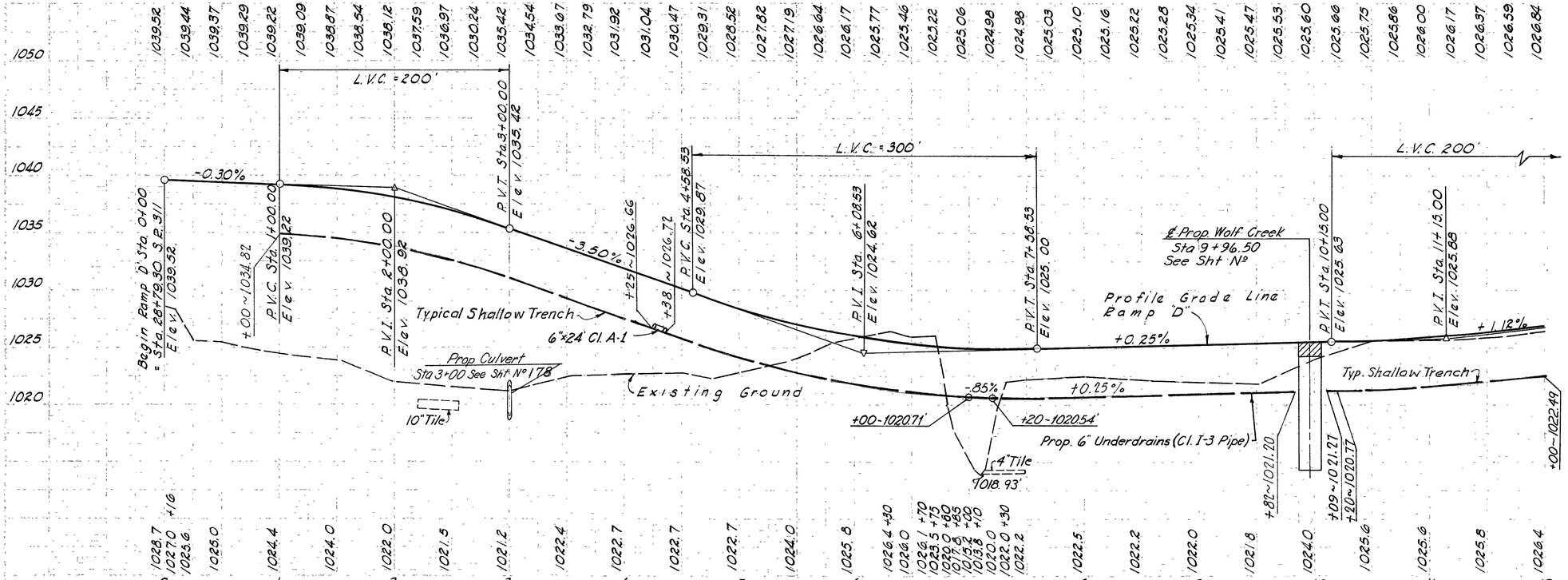


RAMP "D" CURVE DATA

CURVE #1
PI = Sta 2+75.63
Δ = 60°51'34"
D_c = 22°55'06"
R = 250'
L = 265.55'
T = 146.85'
E = 39 94'
SE = 0.032'/ft

CURVE #2
PI = Sta 9+30.77
Δ = 27°51'23"
D_c = 8°
R = 716.20'
L = 348.20'
T = 177 62
E = 21 70
S.E. = 0.083'/ft.

SPIRAL
P.I. = Sta 11+84 93
θ_s = 10°
L_s = 250'
X_c = 249.24'
Y_c = 14 51'
LT = 166.93'
ST = 83 58



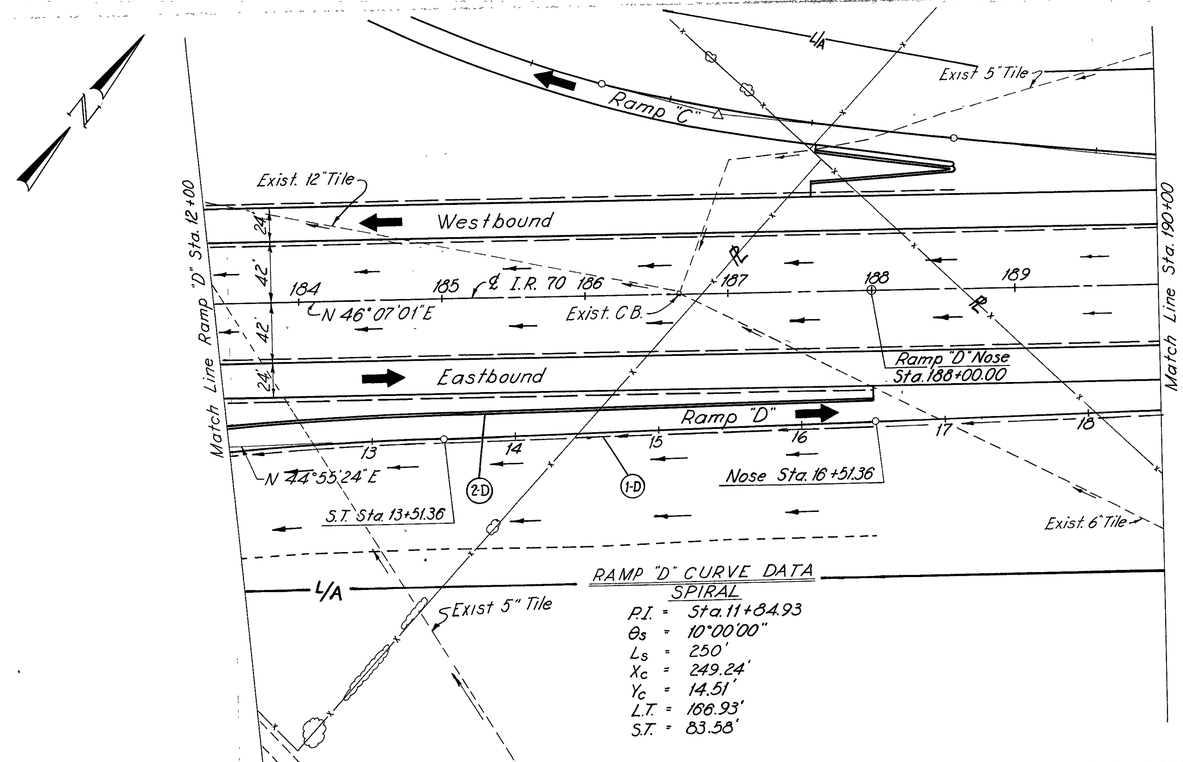
ESTIMATED QUANTITIES

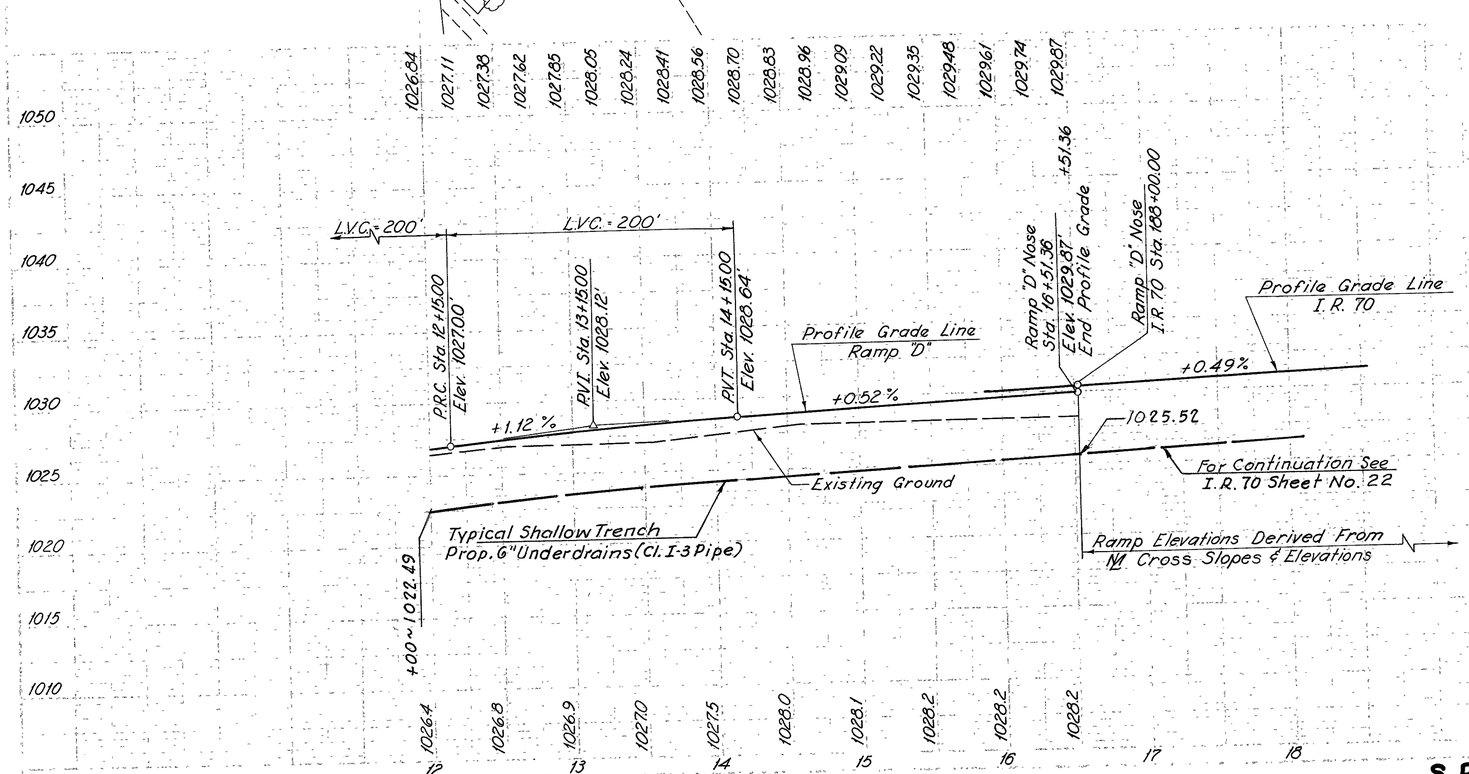
REF. NO.	STATION TO STATION	SIDE	CLASS A-1 M-6.6(b) M-6.8(b) 6"	36"	I-1 Pipe Class F-1 8"	Class I-3 Underdrains 6" Shallow	Class I-3 Underdrains 6" Deep	I-5 Pipe Specials A-1 6"x60" Wye	I-3 6"x6"x6" Tee	I-3 6"x60" Wye	I-2 Masonry Headwalls Type 'C'	I-15 Guard Rail Steel Beam Standard	I-10 Dumped Rock 18"	L-10 Sodding	E-3 Channel Exc.	I-12 Special Curb Type 6
			L.F.	L.F.	L.F.	L.F.		Ea.	Ea.	Ea.	C.Y.	L.F.	C.Y.	S.Y.		L.F.
1-D	1+00 - 12+00	L&R	24		20	1,125		2	1	1						
2-D	3+00	L&R		88							18.		14	7.2	10.7	
3-D	9+25 - 12+00	L														275
1-G	0+27 - 3+45	R										337.5				
2-G	0+27 - 3+50	L										300				
3-G	9+18 - 10+10											75				
4-G	9+18 - 10+06											62.5				
			24	88	20	1125		2	1	1	18	775	14.0	72	10.7	275

S.R. 311 INTERCHANGE RAMP "D" Sta 00+00 To Sta 12+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



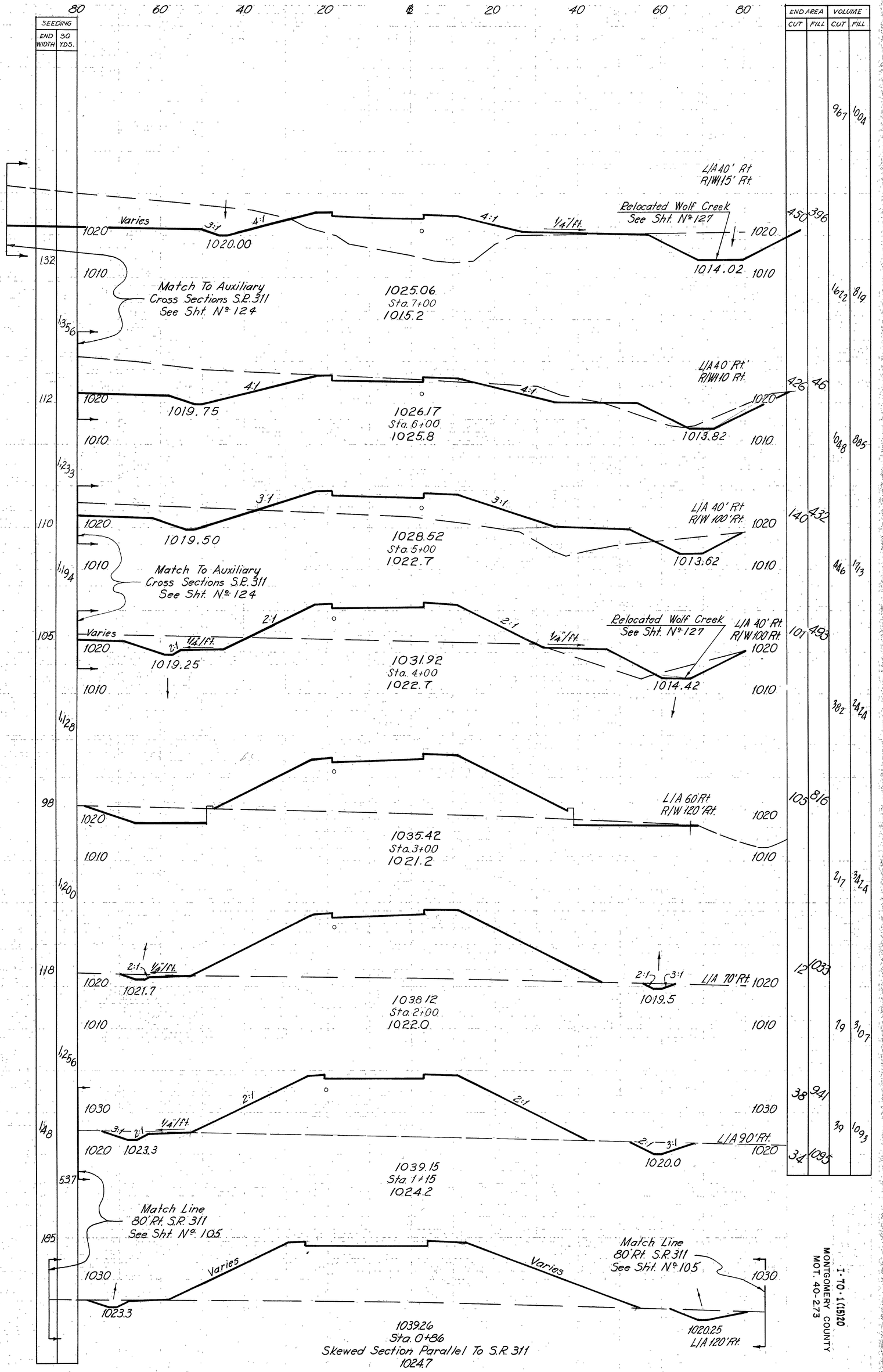


Excavation 326 C.Y.
Embankment 5 C.Y.
Embankment +12% 6 C.Y.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	1-1 Pipe Class I-3 Underdrains 6" Shallow Deep L.F.	I-12 Special Concrete Curb L.F.	Drawing Reference Sheet No.
1-D	12+00 - 16+51	R	451		451
2-D	12+00 - 16+51	R		452	452

S.R. 311 INTERCHANGE - RAMP "D" Sta. 12+00 To Sta. 18+51.00


80 60 40 20 ℄ 20 40 60 80
SEEDING
END WIDTH
SQ YDS.
END AREA
CUT
FILL
VOLUME
CUT
FILL
L/A 40' Rt
R/W 15' Rt.
Relocated Wolf Creek
See Sht. Nº 127
Varies
3:1
4:1
1/4"/ft.
1020.00
1025.06
Sta. 7+00
1015.2
1014.02
Match To Auxiliary
Cross Sections S.P. 311
See Sht. Nº 124
L/A 40' Rt
R/W 10 Rt.
1019.75
1026.17
Sta. 6+00
1025.8
1013.82
L/A 40' Rt
R/W 100' Rt.
1019.50
1028.52
Sta. 5+00
1022.7
1013.62
2:1
1019.25
1031.92
Sta. 4+00
1022.7
1014.42
L/A 60' Rt
R/W 120' Rt.
1035.42
Sta. 3+00
1021.2
1021.7
1038.12
Sta. 2+00
1022.0
1019.5
L/A 70' Rt.
L/A 90' Rt.
1023.3
1039.15
Sta. 1+15
1024.2
1020.0
Match Line
80' Rt. S.R. 311
See Sht. Nº 105
1023.3
1039.26
Sta. 0+86
Skewed Section Parallel To S.R. 311
1024.7
1020.25
L/A 120' Rt.
I-70-1(15)20
MONTGOMERY COUNTY
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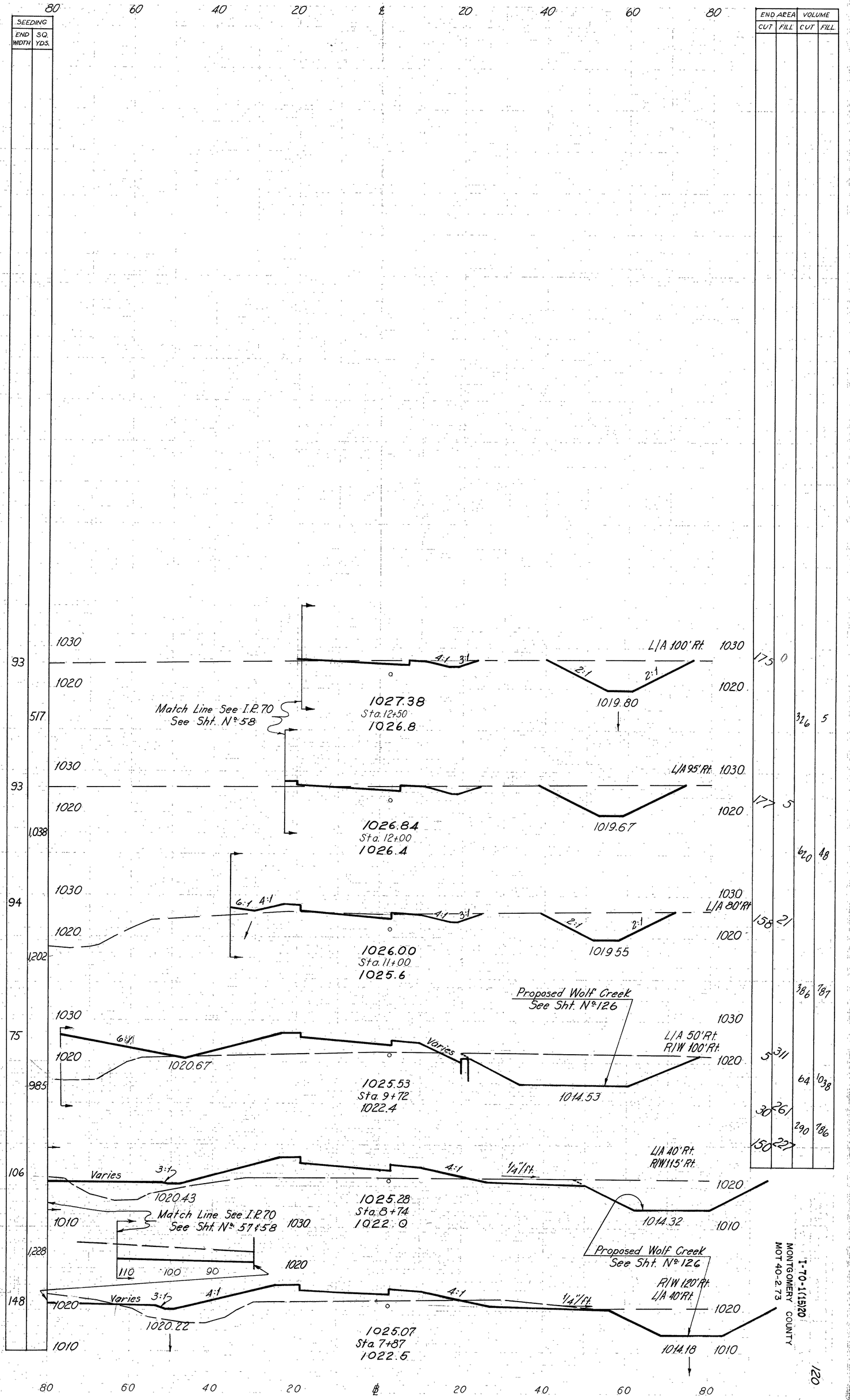
80 60 40 20 ℄ 20 40 60 80
SEEDING
END WIDTH
SQ. YDS.
END AREA
CUT
FILL
VOLUME
CUT
FILL
L/A 100' Rt.
L/A 95' Rt.
L/A 80' Rt.
L/A 50' Rt.
R/W 100' Rt.
L/A 40' Rt.
R/W 115' Rt.
R/W 120' Rt.
L/A 40' Rt.
Match Line See I.R.70
See Sht. No. 58
Match Line See I.R.70
See Sht. No. 57 & 58
Proposed Wolf Creek
See Sht. No. 126
Proposed Wolf Creek
See Sht. No. 126
Varies
4:1
3:1
2:1
6:1
1/4"/ft.
1027.38
Sta. 12+50
1026.8
1026.84
Sta. 12+00
1026.4
1026.00
Sta. 11+00
1025.6
1025.53
Sta. 9+72
1022.4
1025.28
Sta. 8+74
1022.0
1025.07
Sta. 7+87
1022.5
1019.80
1019.67
1019.55
1020.67
1020.43
1020.22
1014.53
1014.32
1014.18
1030
1020
1010
93
517
93
1038
94
1202
75
985
106
1228
148
175
0
177
5
158
21
5
311
30
261
150
227
326
5
620
48
386
787
64
1038
290
786
110
100
90
MONTGOMERY COUNTY
I-70-1(11)20
MOT 40-2.73
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FED RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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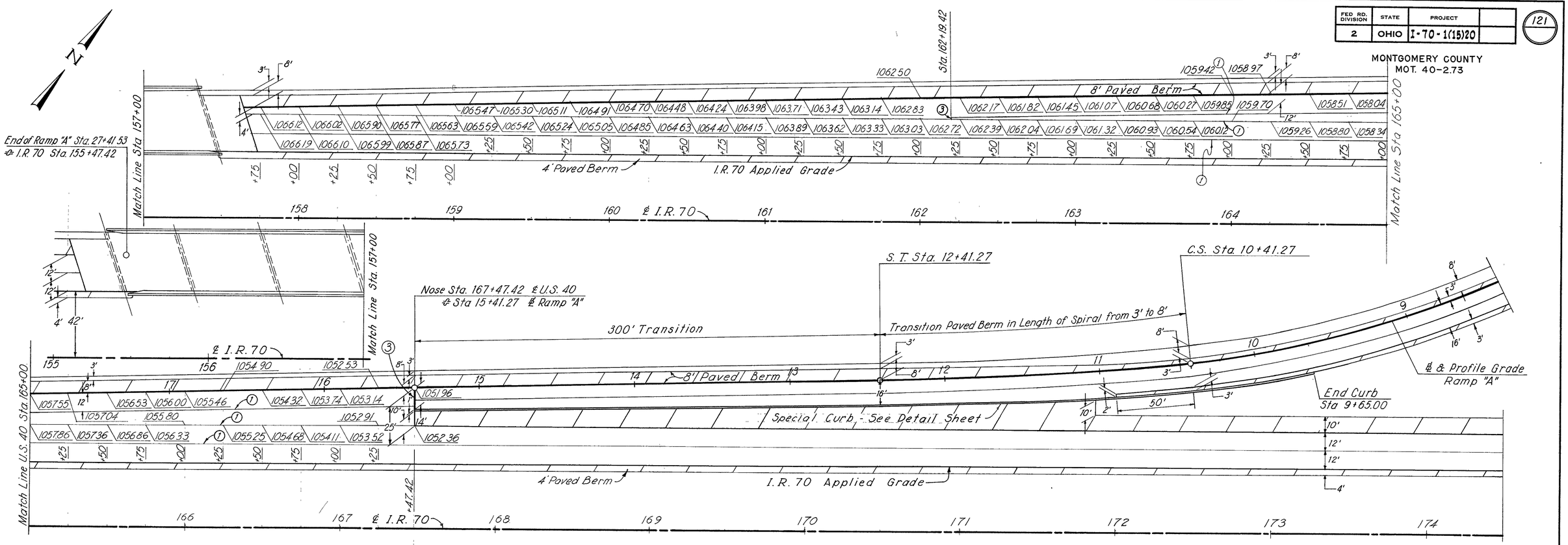
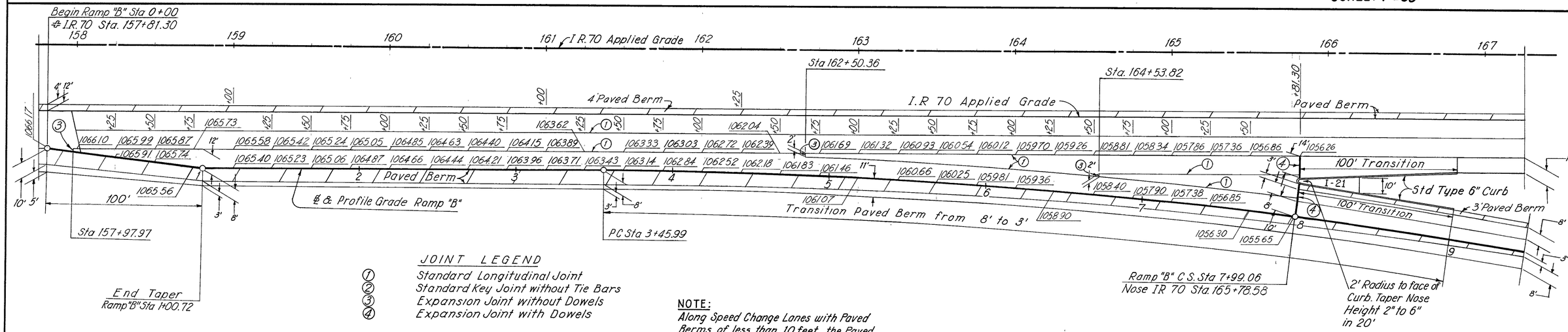
MONTGOMERY COUNTY
MOT. 40-2.73



RAMP "A" S. R. 311 INTERCHANGE

SCALE: 1"=30'



JOINT LEGEND

1. Standard Longitudinal Joint
2. Standard Key Joint without Tie Bars
3. Expansion Joint without Dowels
4. Expansion Joint with Dowels

NOTE:
Along Speed Change Lanes with Paved Berms of less than 10 feet, the Paved Berm build-up shall conform to that of the Ramp Typical Section.

RAMP "B" S. R. 311 INTERCHANGE

SCALE: 1"=30'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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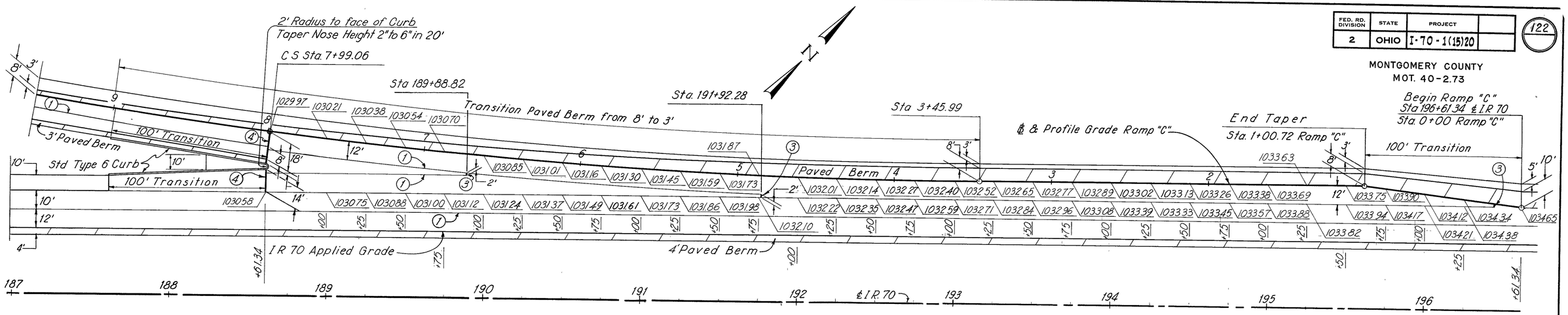
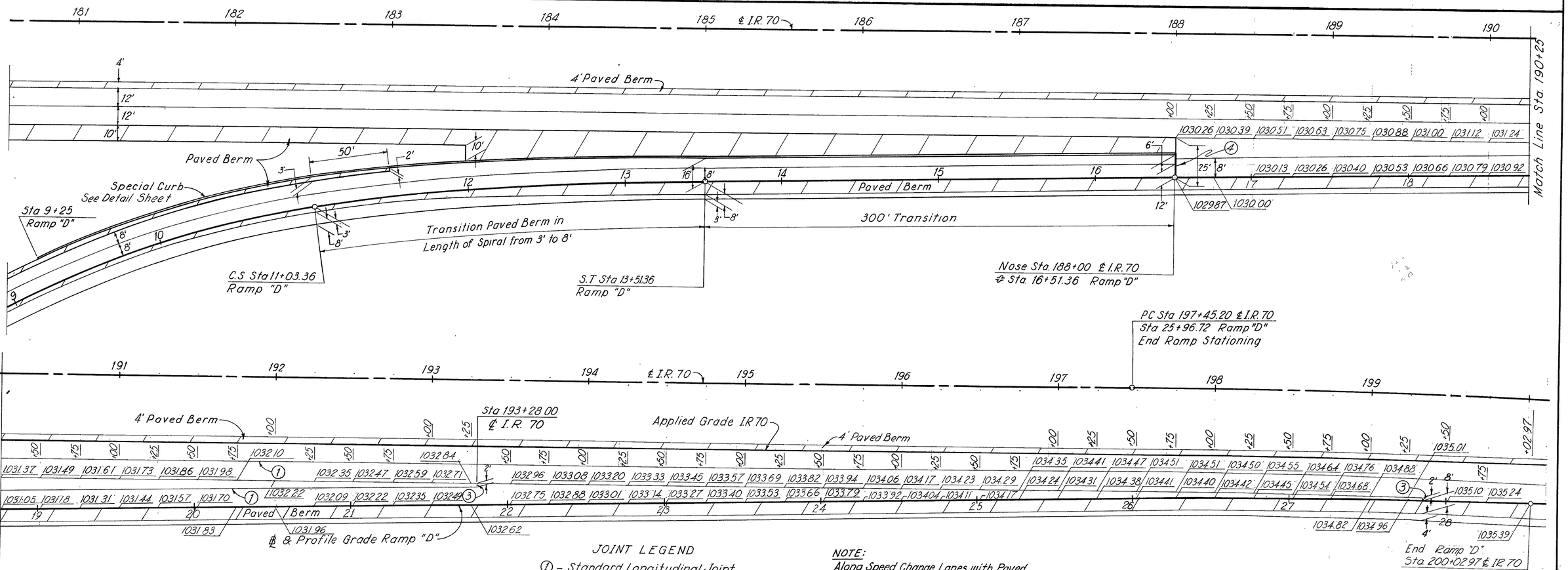
MONTGOMERY COUNTY
MOT. 40-2.73



RAMP "C" S.R. 311 INTERCHANGE

SCALE: 1" = 30'



JOINT LEGEND

① - Standard Longitudinal Joint
② - Standard Key Joint w/o Tie Bars
③ - Expansion Joint w/o Dowels
④ - Expansion Joint with Dowels

NOTE:
Along Speed Change Lanes with Paved Berms of less than 10 feet, the Paved Berm build-up shall conform to that of the Ramp Typical Section.

RAMP "D" S.R. 311 INTERCHANGE

SCALE: 1" = 30'

FED RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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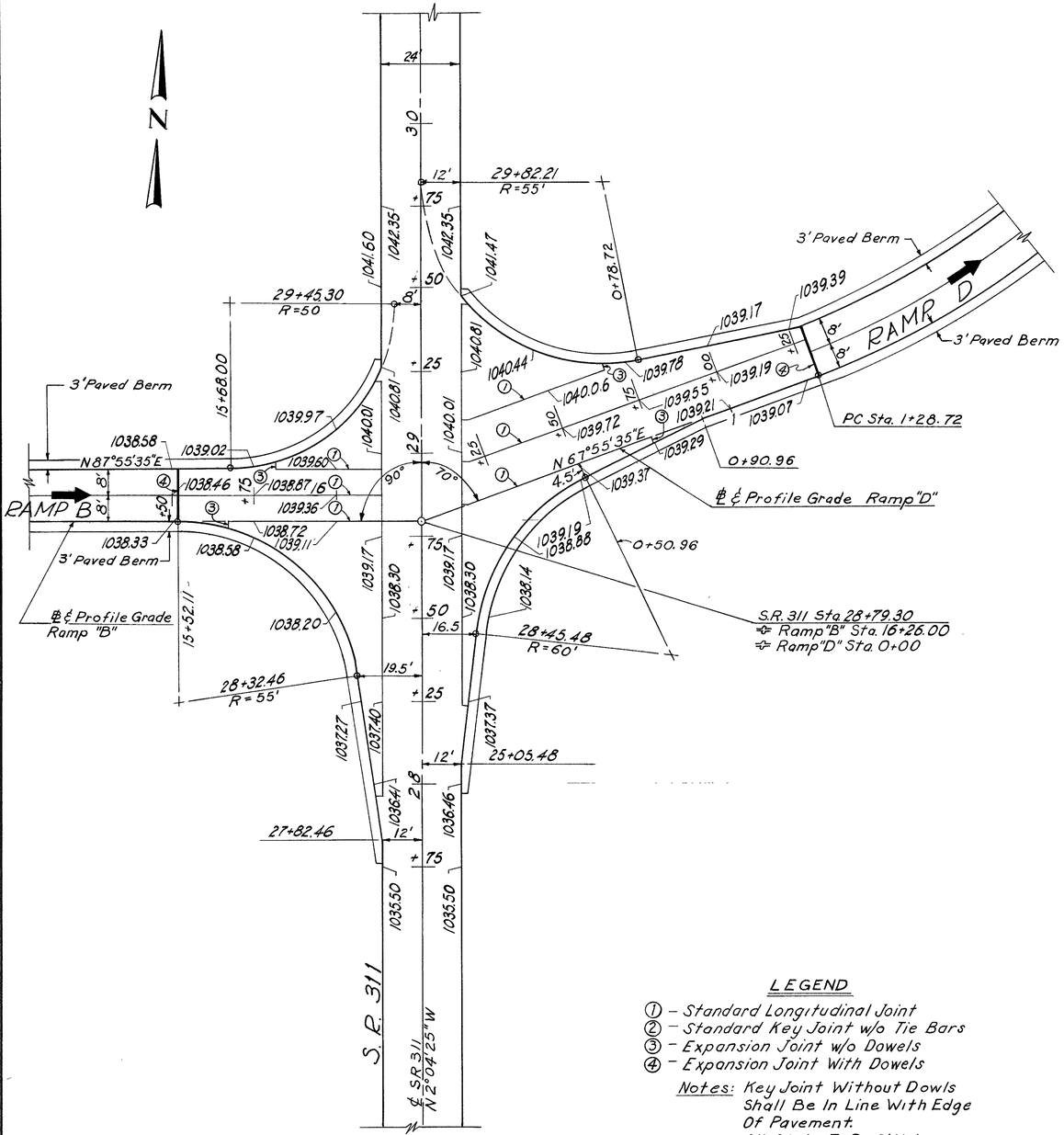
MONTGOMERY COUNTY
MOT. 40-2.73

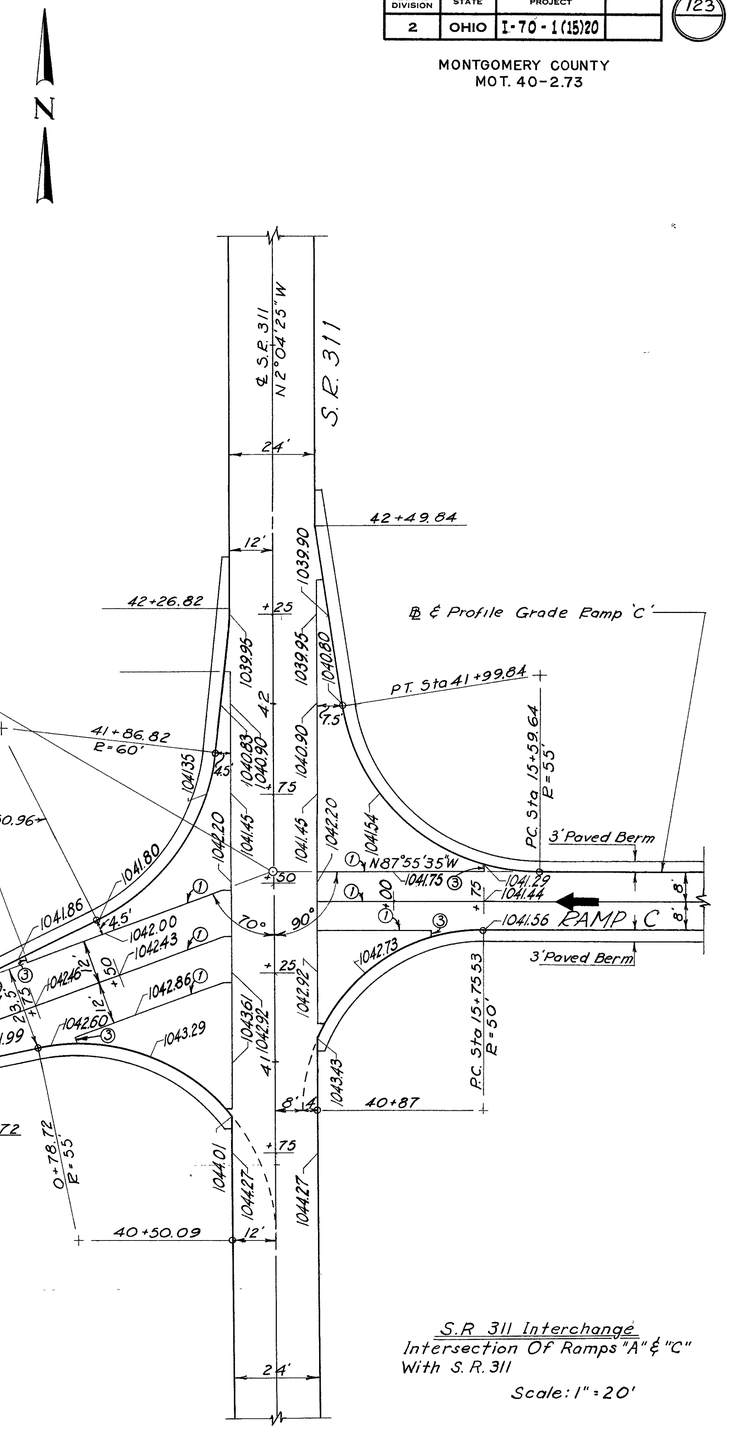


LEGEND

① – Standard Longitudinal Joint
② – Standard Key Joint w/o Tie Bars
③ – Expansion Joint w/o Dowels
④ – Expansion Joint With Dowels

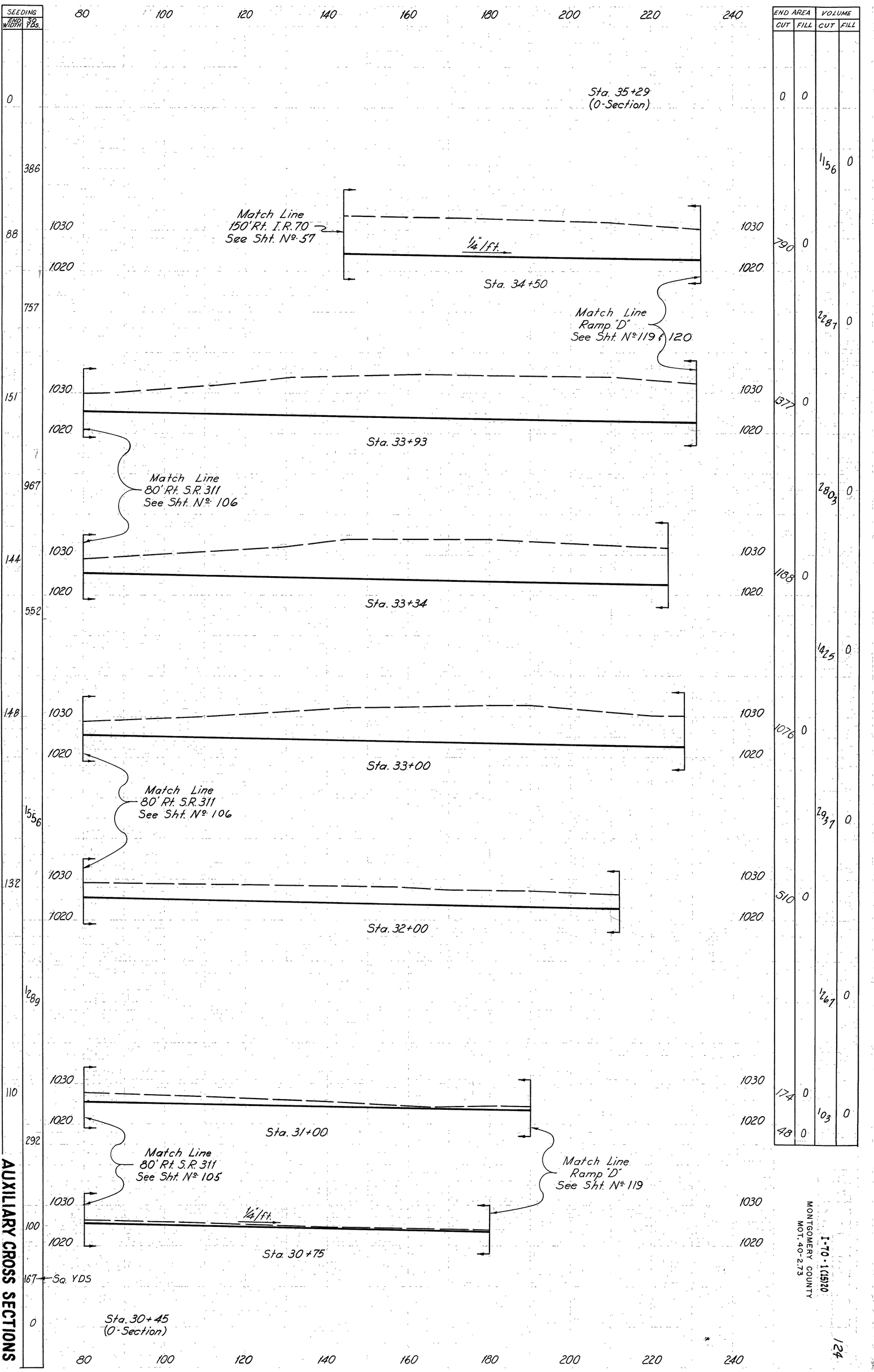
Notes: Key Joint Without Dowls Shall Be In Line With Edge Of Pavement.
All Stubs To Be 2' Unless Otherwise Noted.

S.R. 311 Interchange
Intersection Of Ramps "B" & "D" With S.R. 311.
Scale: 1" = 20'



S.R 311 Interchange
Intersection Of Ramps "A" & "C" With S. R. 311
Scale: 1" = 20'

S.R. 311 INTERSECTION DETAILS



AUXILIARY CROSS SECTIONS

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

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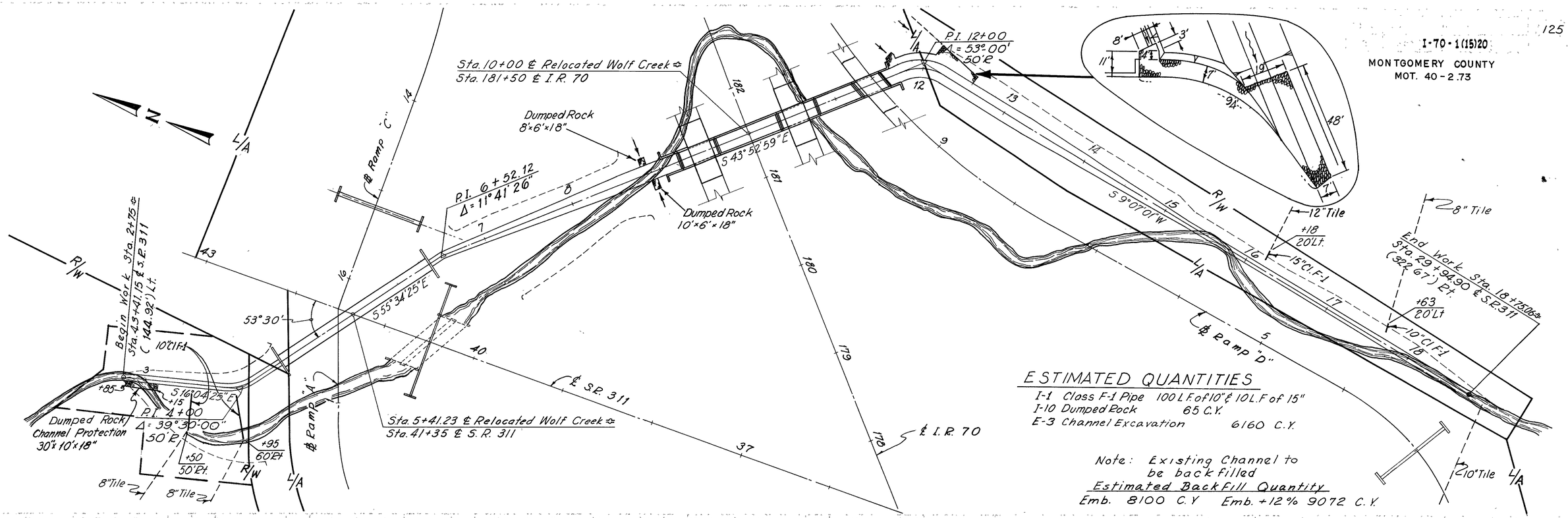
I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

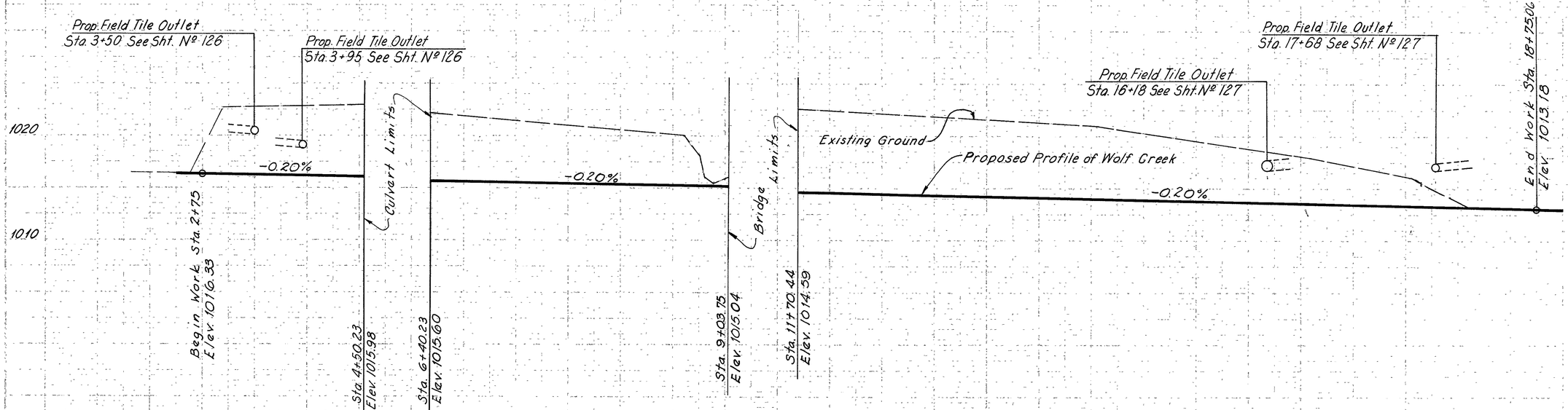


ESTIMATED QUANTITIES

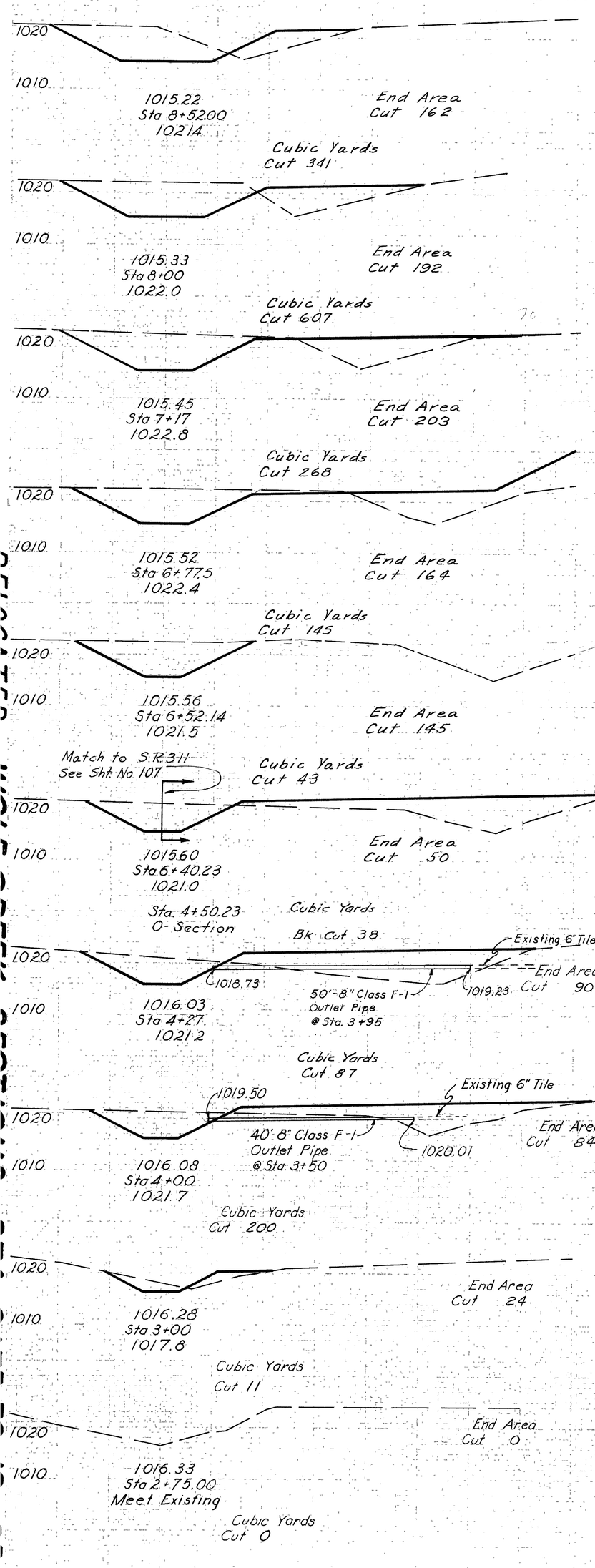
I-1 Class F-1 Pipe 100 L.F. of 10" & 10 L.F. of 15"
I-10 Dumped Rock 65 C.Y.
E-3 Channel Excavation 6160 C.Y.

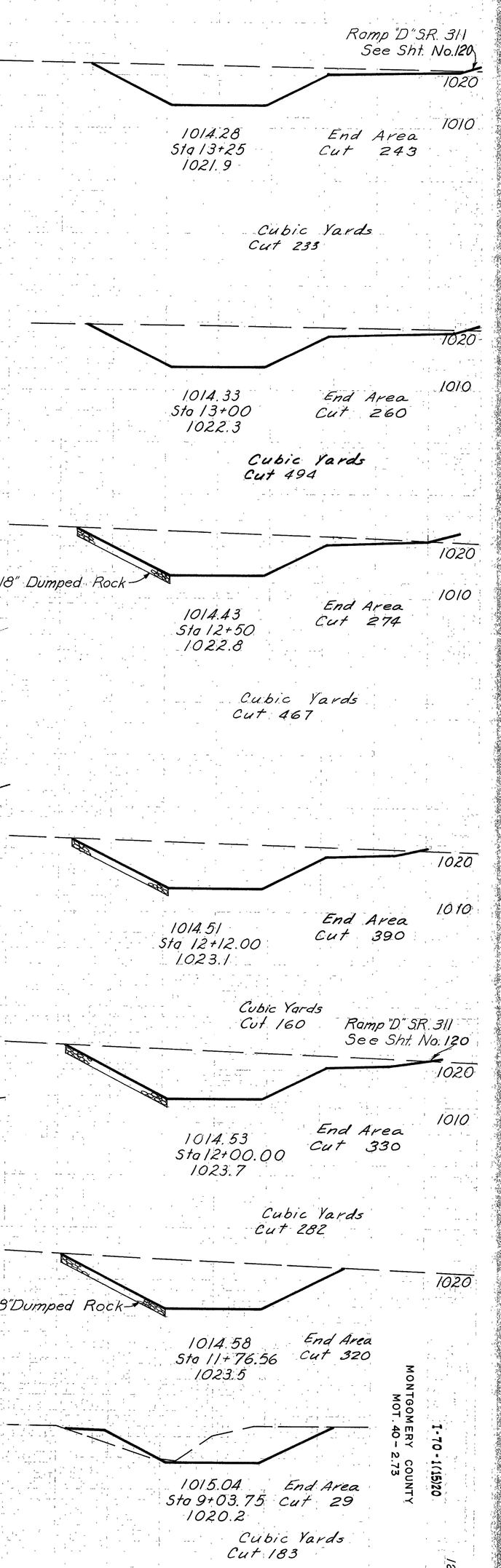
Note: Existing Channel to be backfilled

Estimated Backfill Quantity
Emb. 8100 C.Y. Emb. +12% 9072 C.Y.



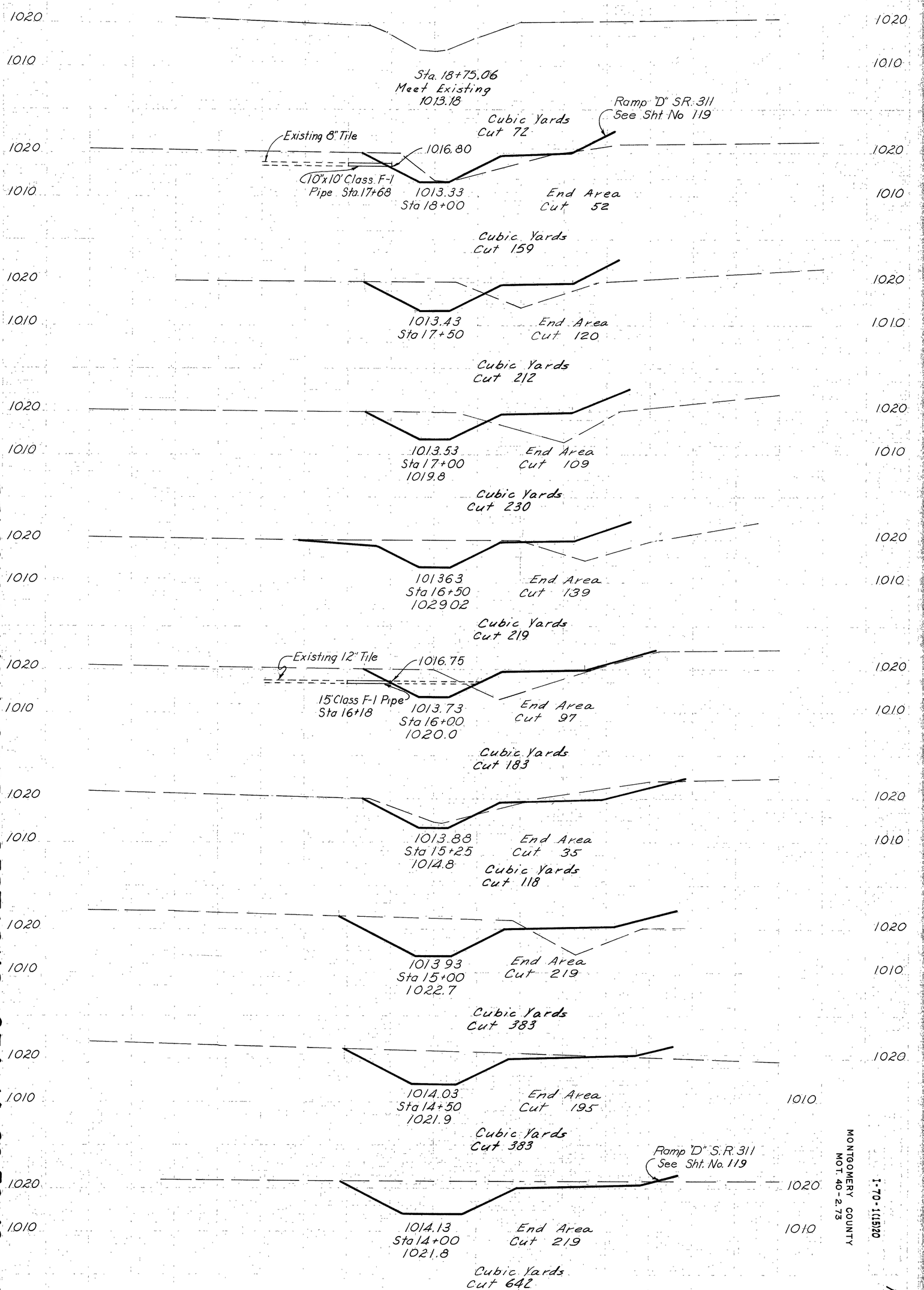
Plan of Relocated Wolf Creek Sta. 2+75 to 18+75.06





MONTGOMERY COUNTY
MOT.40-2.73

1-70-1(15)20



MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1.115 120

127

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Tab in Pole # TLP 10-37
8°38'00"
6°32'30"
14°45'
2°36'
1422.74'
1500'
1118.37'
℄ Brookville-Phillipsb'g Road
RR Spike Sta 5+00
RR Spike ℄ E I R 70 Sta 238+82.79
Tab in D P & L Pole #312900

Trees & Stumps To Be Removed
12"-18" 2
18"-24" 2
24"-30" 1

N

Fr. Chicken House
Fr. Corn Crib
Privy
Fr. Shed
18" Ash
12" Pear
Fr. Barn & Gar.
18" Cat
30" Sumac
12" Pine
8" Pine
20" Cat
Gravel Drive
2-Sty. Fr. Res.
Carport
Anc.
18" Map.
4" Pine
6" Pine
12" Tree
18" Ash
Gas Meter
30" Ash
15" Ash.
15" Cat
20" Ash
30" Ash
12" Map.
12" Hick
12" Ash
24" Oak
12" Hick
15" Hick
30" Ash
24" Ash
BEGIN WORK Sta. 11+50
Existing R.O.W.
8" Gas Line
6" Gas Line
4" Gas Line to be aband.
8" Valve
6" Valve
R/W
Sta. 14+00
4" Gas Line
M.B
Gravel Drive
N 0°04'01" E
15" Pear
18" Cat
1-D
18" Wal
Match Line
Clothes post
Drilled Well
34" Pear
2-Sty Fr. Res.
Leach Bed
Septic Tank
W/A
Fr Shed
PROPOSED ℄ BROOKVILLE - PHILLIPSBURG ROAD
Anc
40" Cat
Gas Meter
Anc. Existing R.O.W.
36" Cat
8" Spruce
10" Ceder
12" Pine
Conc. Walk
Gravel Drive
15" Tree
12" Tree
15" Tr.
See Sht. No 134 for Brookville-Phillipsburg Access Rd.
2-Sty Fr. Res.
Privy
Fr Shed
Frame Barn & Shed
R/W

1048.53 1048.13 1048.99 1049.31 1049.70 1050.16 1050.68 1051.26 1051.90

1070
1065
1060
1055
1050
1045
1040
1035
1030

1054.4 1054.6 1055.0 1054.9 1054.1 1052.8 1051.7 1050.7 1049.9 1049.5 1049.2 1049.0 1048.8 1048.9 1048.6 1048.2 1048.1 1048.3 1048.2 1048.1 1047.7 1046.7 1045.9

2 3 4 5 6 7 8 9 10 11 12 13 14

L.V.C. = 350'
P.V.C. Sta. 11+75
Elev. 1048.40
+0.40%
El. 1042.83
1.73%
El. 1044.72
6" Gas Line
1044.75
12"x100' Pipe Class F-1
El. 1041.67
8" Gas line
BEGIN CONSTRUCTION Sta. 11+50 Elev. 1048.3 ±
P.V.I. Sta. 13+50 Elev. 1049.10

ESTIMATED QUANTITIES

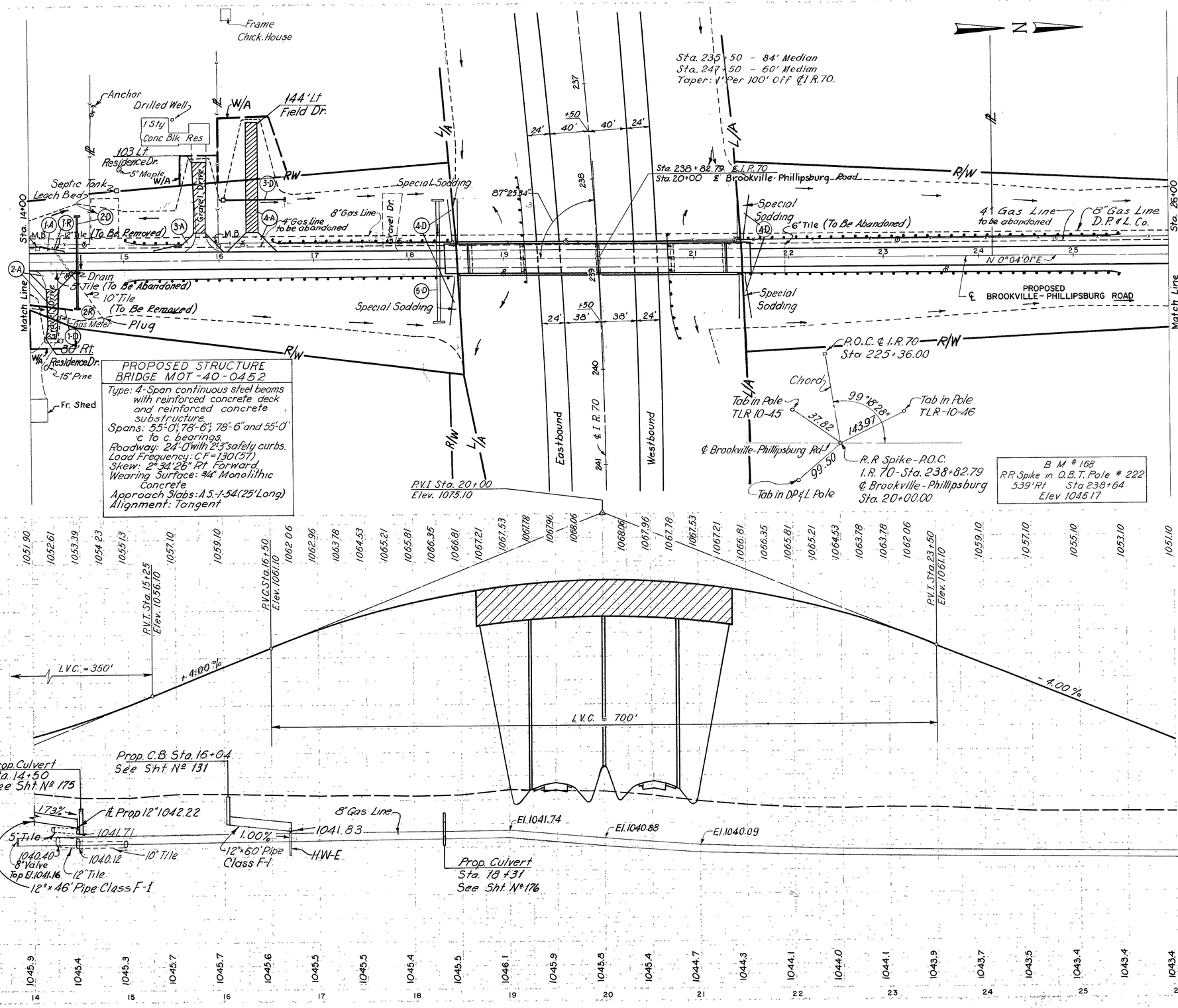
REF NO.	STATION TO STATION	SIDE	I-1 Class F-1 12" L.F.
1-D	13+00 - 14+00	℄	100
			100

Excavation 341 C.Y.
Embankment 880 C.Y.
Embankment +12% 986 C.Y.

Brookville-Phillipsburg Road

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 (M.6.10) (M.6.06)	I-1 Pipe Class F-1	T-35 Asphaltic Concrete Surface Course Type "C" (320-85)	B-19 Aggregate Base Course	I-8 Catch Basin Stand.	I-1 Class A-1 Concrete M.6.40	I-10 Sodding Seeding & Berm & Slope Prot.	I-12 Masonry Headwalls Standard	E-12 Pipe Removal 15" & Under	L-10 Sodding
			30" L.F.	12" L.F.	5" C.Y.	8" C.Y.	22-B Each	30" L.F.	S.Y.	Type 'A' Type 'E' C.Y.	12" L.F.	10" L.F.
1-D	14+00 - 14+46	R	98	46			1	12.8	103	15.4	34	50
2-D	14+50 - 16+05	R&L			1.7	4.3						6.8
3-D	16+05 - 16+67	L		60	4.0	9.9	12.4			100		
4-D	18+48 - 21+52	R&L			4.6	11.5	23.4			.23		
5-D	18+31				4.0	9.9	34.4					
1-A	14+02							12.8	103	15.4	34	50
2-A	14+23											6.8
3-A	15+79											
4-A	15+35	L&R									34	
1-R	14+25 - 14+44											
2-R	14+44 - 14+75	R	98	106	14.3	35.6	70.2	1	128	103	15.4	1.23	34	6.8

Excavation 1641 C.Y.
Embankment 42438 C.Y.
Embankment +12% 47530 C.Y.

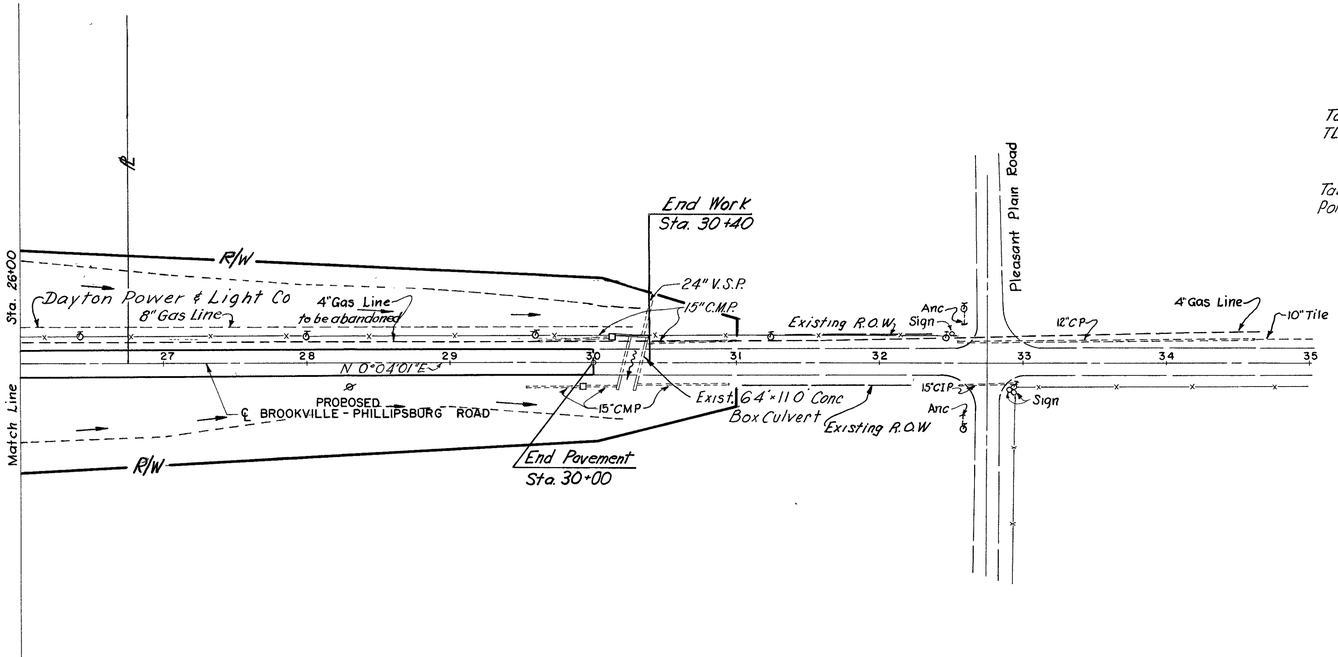
Brookville-Phillipsburg Road

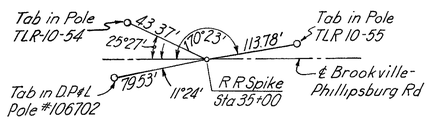
STA. 14+00 TO STA. 26+00

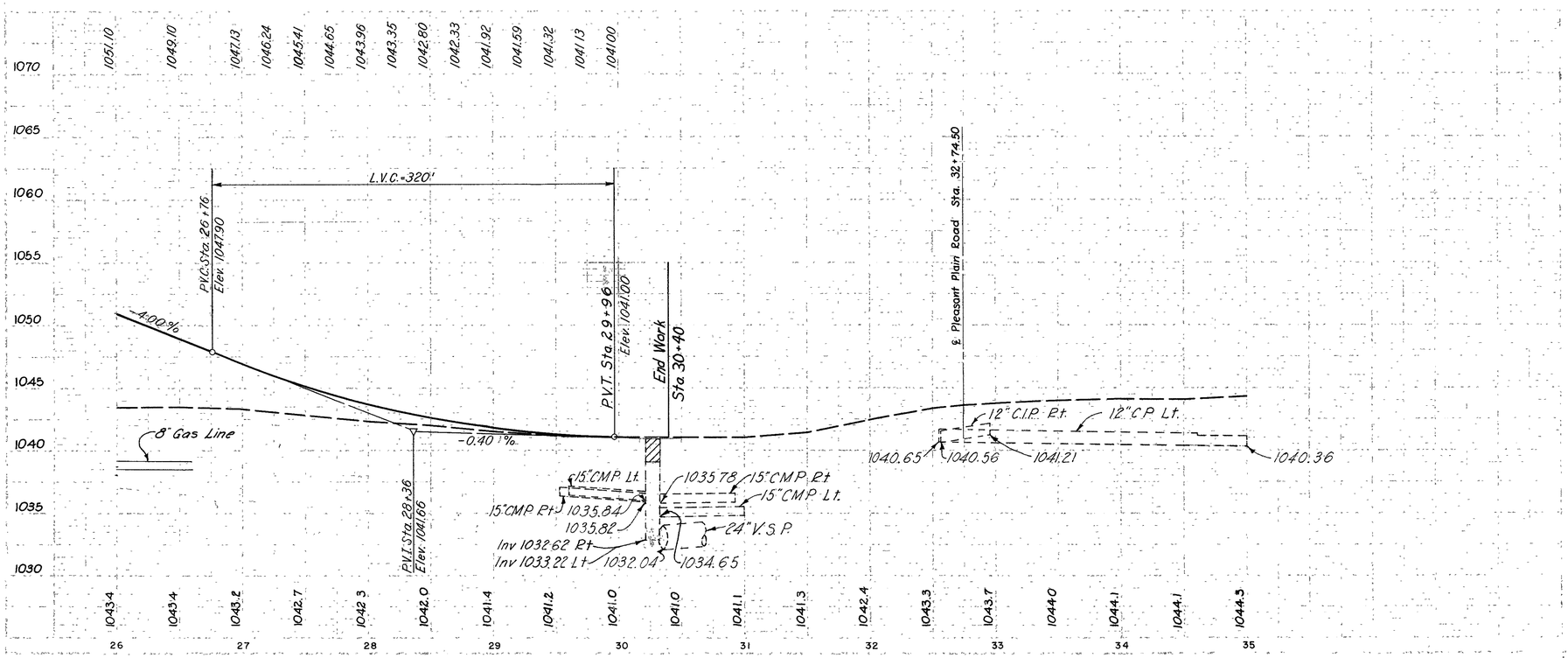
I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

N







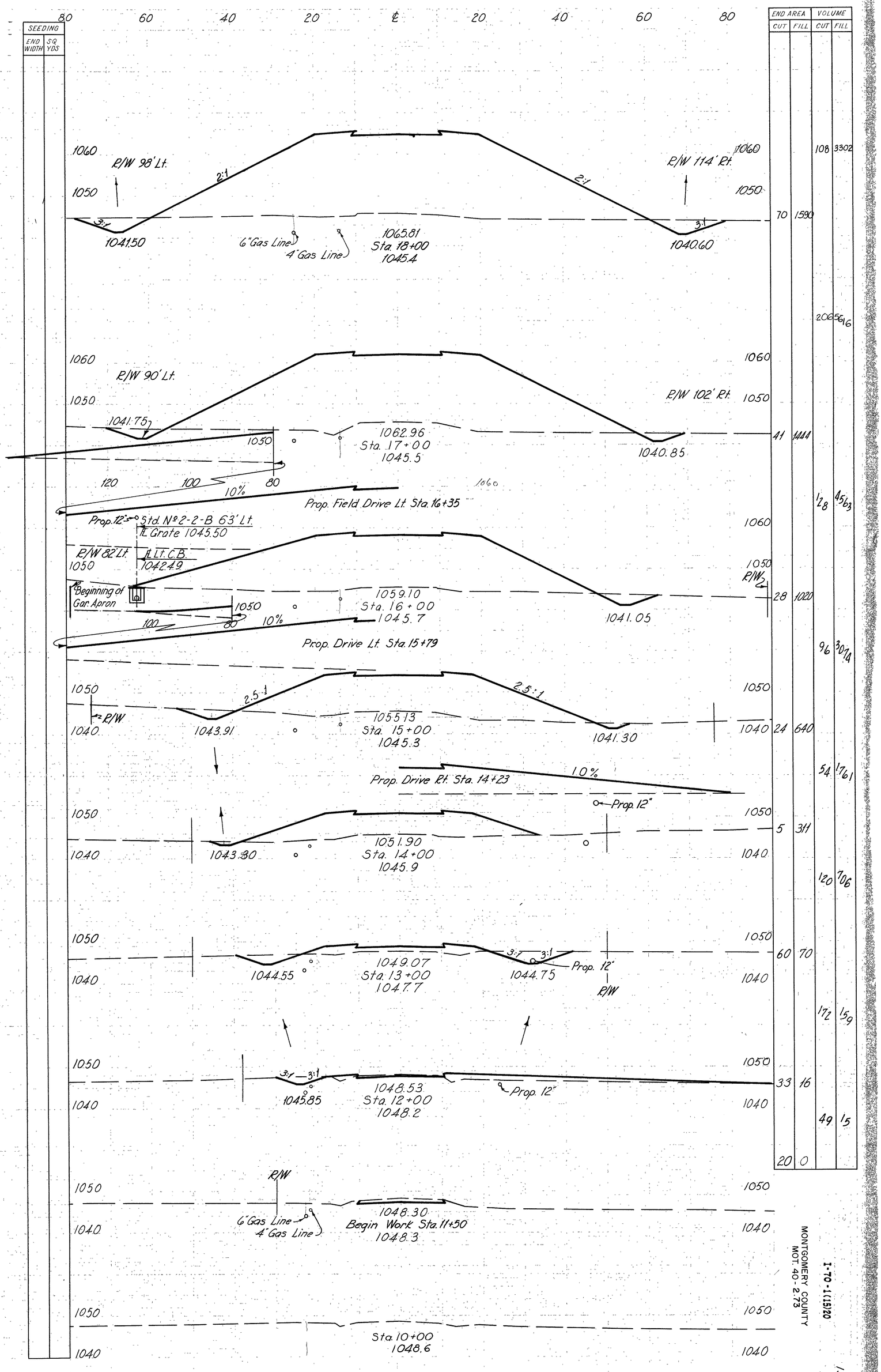
ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	
	(None)		

Excavation	1392 C.Y.
Embankment	1358 C.Y.
Embankment +12%	1521 C.Y.

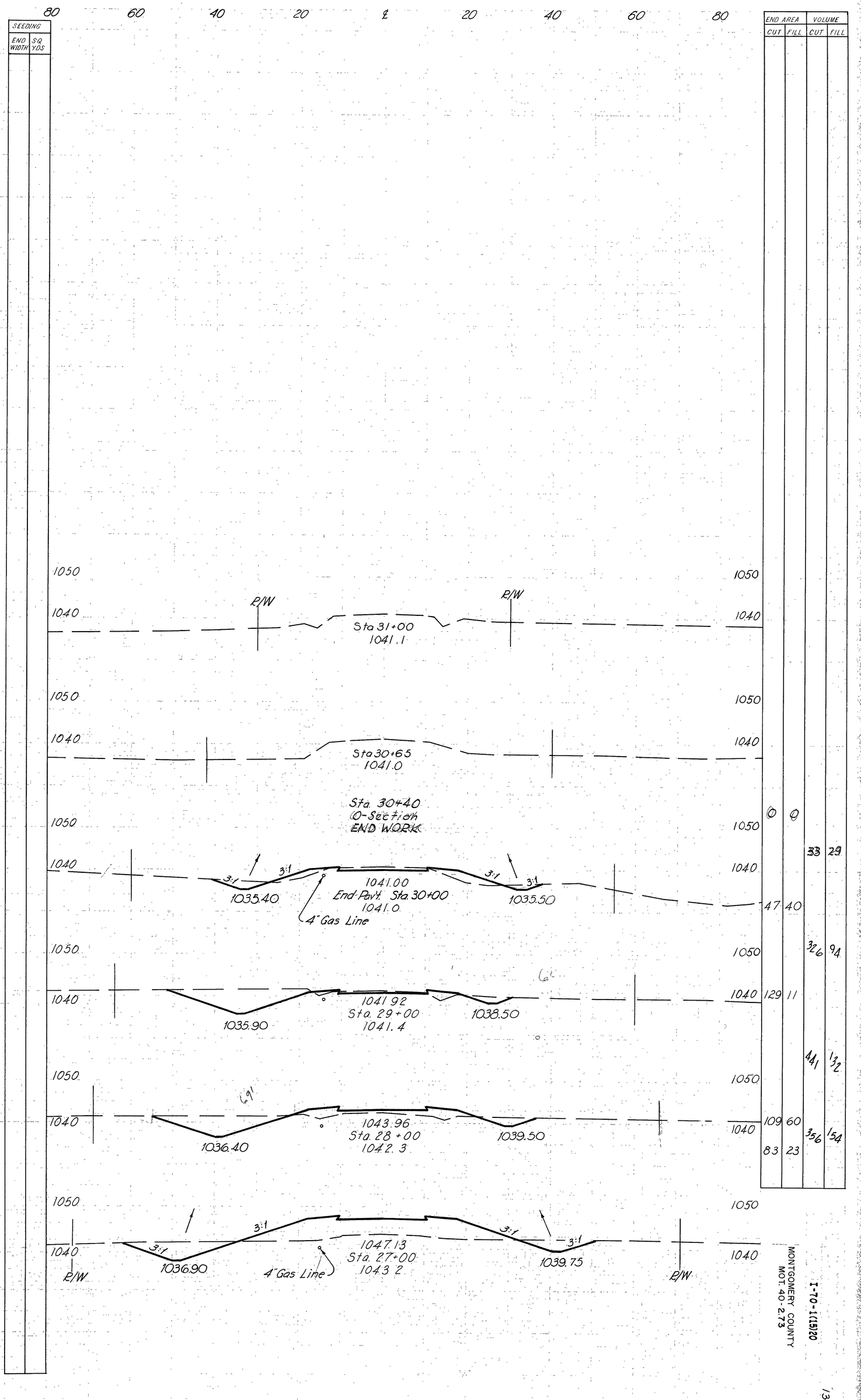
Brookville-Phillipsburg Road

STA. 26+00 TO STA. 35+00


80 60 40 20 ℄ 20 40 60 80
SEEDING
END WIDTH
SQ YDS
END AREA
CUT
FILL
VOLUME
CUT
FILL
1060
1050
1040
R/W 98' Lt.
2:1
3:1
1041.50
6" Gas Line
4" Gas Line
1065.81
Sta. 18+00
1045.4
2:1
3:1
1040.60
R/W 114' Rt.
70 1590
108 3302
R/W 90' Lt.
1041.75
1050
1062.96
Sta. 17+00
1045.5
1040.85
R/W 102' Rt.
41 1111
2006 616
120 100 10% 80
Prop. Field Drive Lt. Sta. 16+35
Prop. 12"
Std. No 2-2-B 63' Lt.
℄ Grate 1045.50
R/W 82' Lt.
℄ Lt. C.B.
1042.49
Beginning of Gar. Apron
1059.10
Sta. 16+00
1045.7
1041.05
100 80 10%
Prop. Drive Lt. Sta. 15+79
28 1020
128 456 3
R/W
2.5:1
2.5:1
1055.13
Sta. 15+00
1045.3
1043.91
1041.30
24 640
96 3014
Prop. Drive Rt. Sta. 14+23
1.0%
Prop. 12"
1051.90
Sta. 14+00
1045.9
1043.30
5 311
54 1761
1049.07
Sta. 13+00
1047.7
1044.55
1044.75
Prop. 12"
R/W
60 70
120 706
1048.53
Sta. 12+00
1048.2
1045.85
Prop. 12"
33 16
172 159
49 15
20 0
R/W
6" Gas Line
4" Gas Line
1048.30
Begin Work Sta. 11+50
1048.3
Sta. 10+00
1048.6
MONTGOMERY COUNTY
MOT. 40-2.73
I-70-1(15)20
131

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



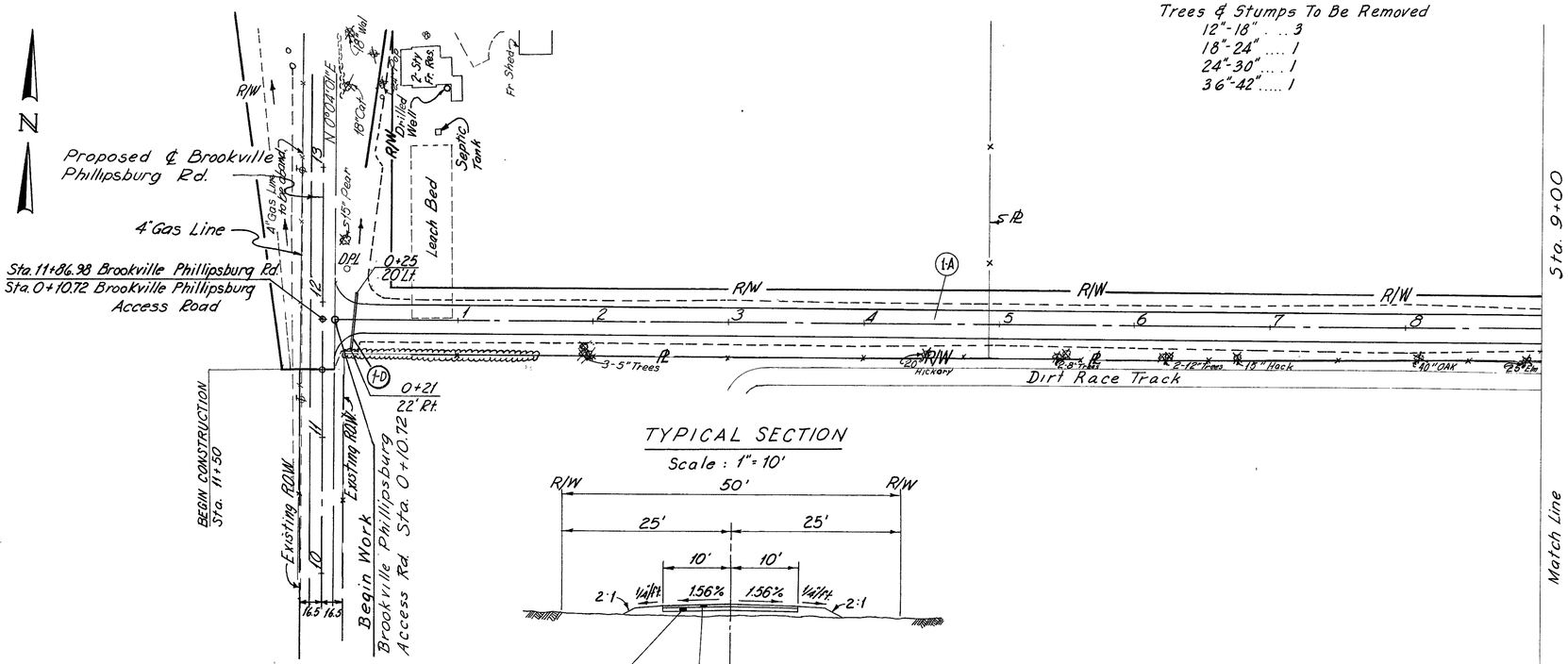
I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

133

I-70 - 1(15)20

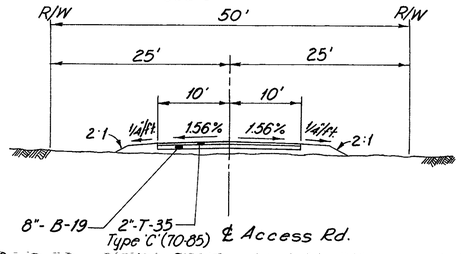
MONTGOMERY COUNTY
MOT. 40-2.73

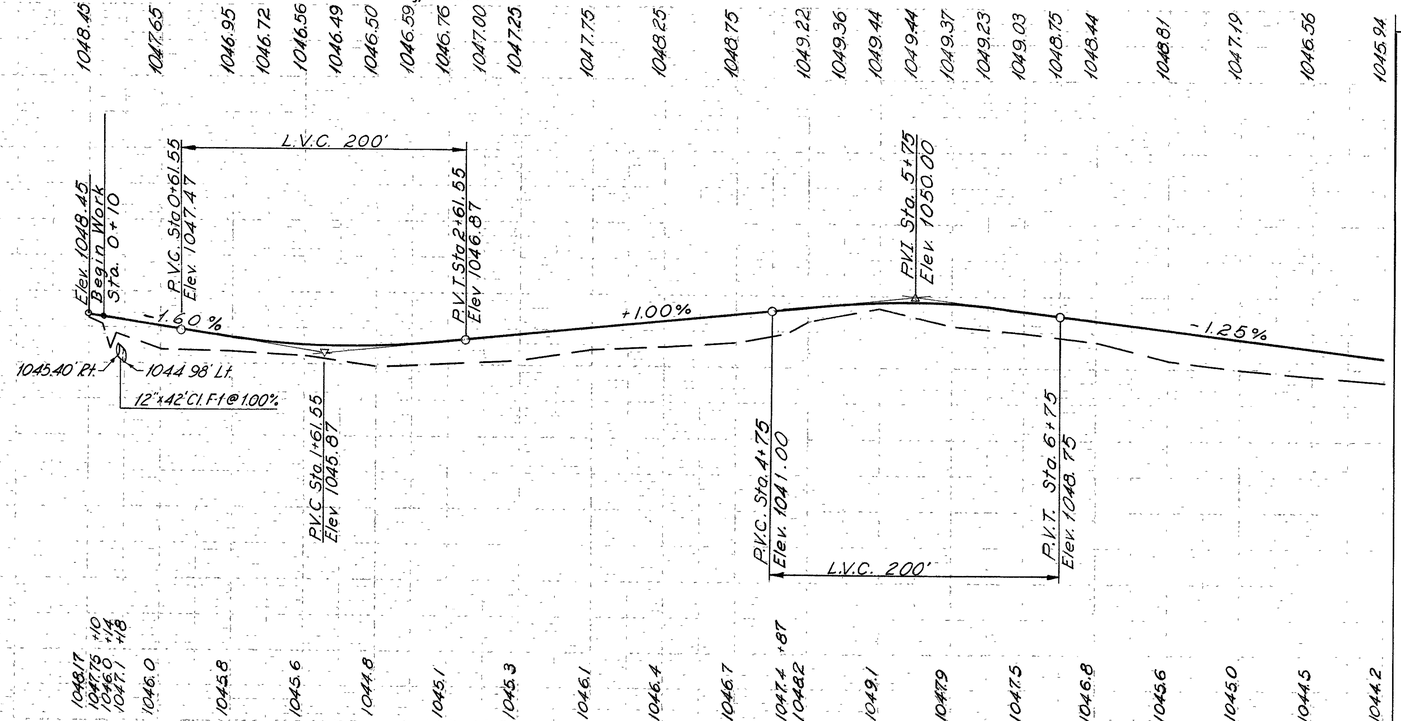
Trees & Stumps To Be Removed
12"-18" . . . 3
18"-24" 1
24"-30" 1
36"-42" 1



TYPICAL SECTION

Scale : 1" = 10'





ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	I-1 Pipe Class F-1 15" L.F.	B-19 T-35 Aggregate Base 8" C.Y.	Asphaltic Concrete Surface Course 2" C.Y.
1-D	0+24	L&R	42		
1-A	0+10.72 - 9+00	L&R		*88.9 355.6	*111.1
			42	*88.9 355.6	*111.1

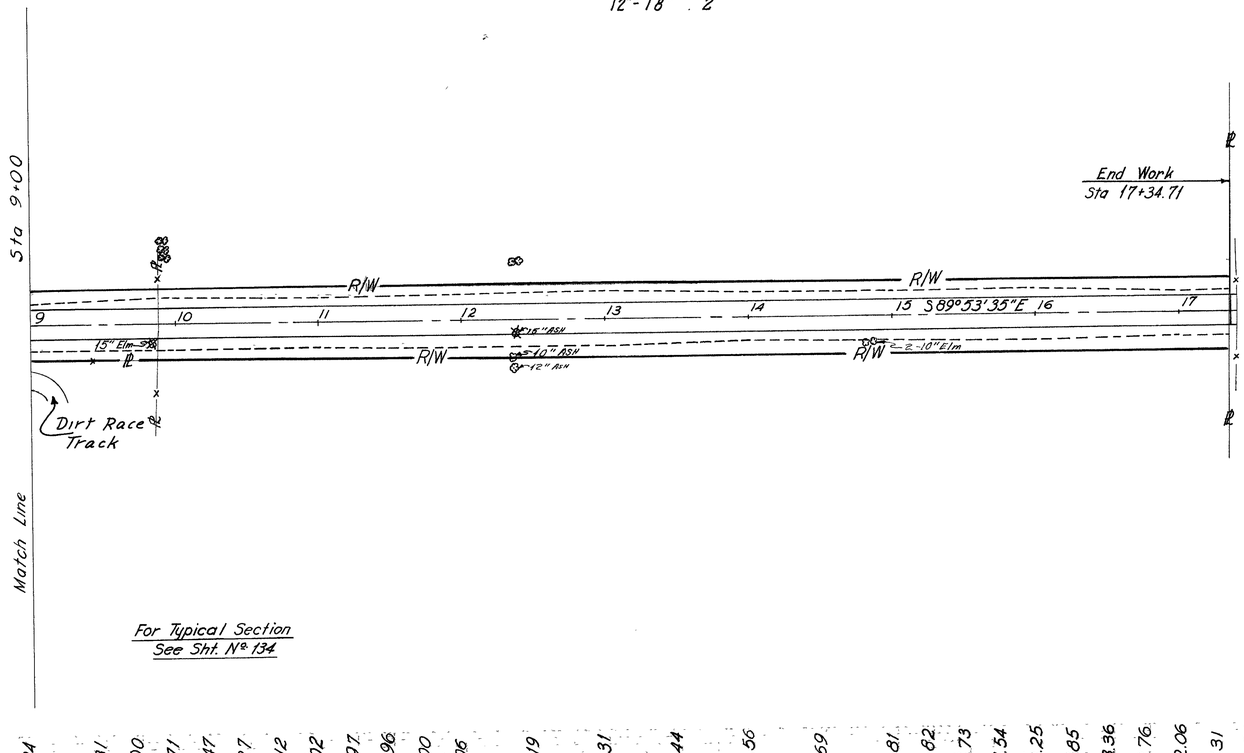
*100% State Participation

Excavation	0
Embankment	1026 C.Y.
Embankment +12 %	1149 C.Y.

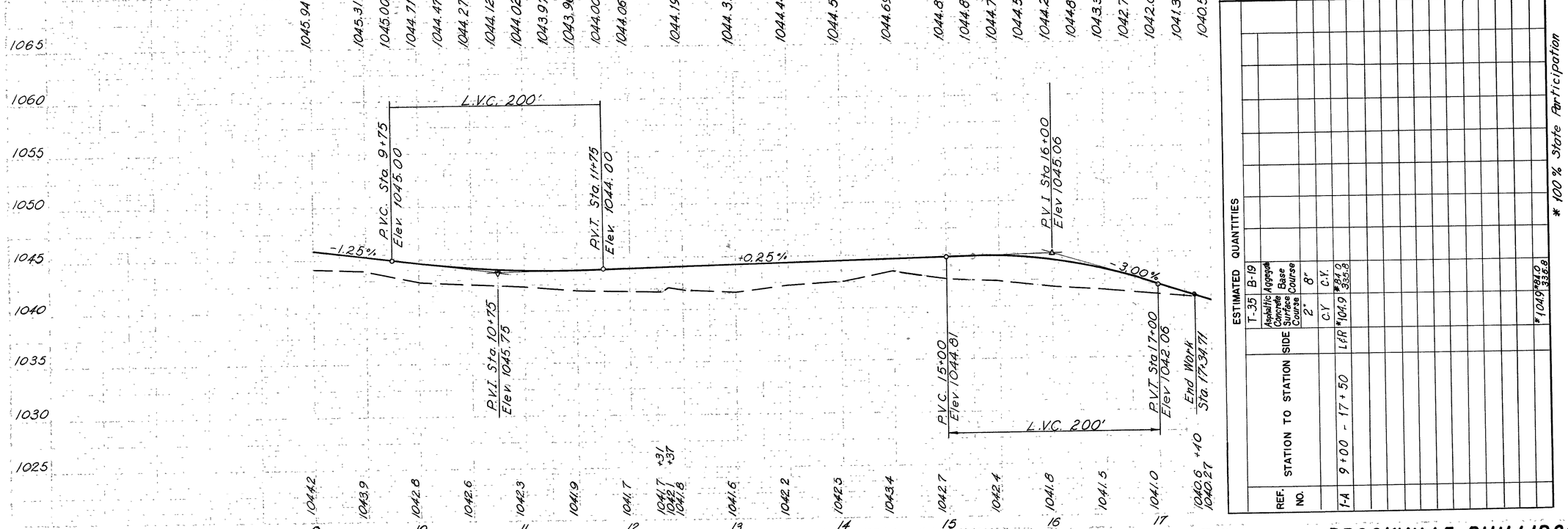
I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees & Stumps To Be Removed
12"-18" . 2



For Typical Section
See Sht. No. 134



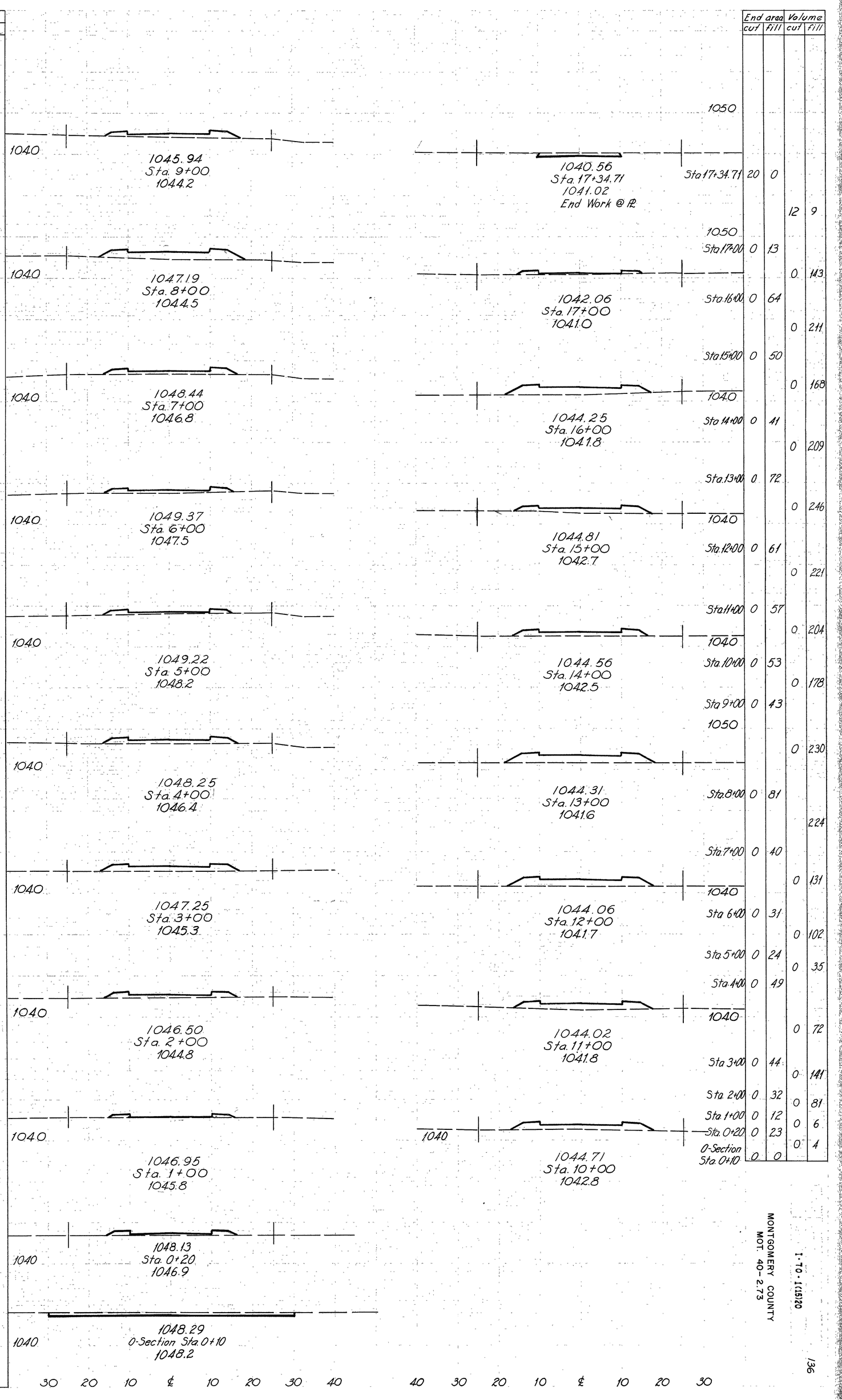
ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	T-35 Asphaltic Aggregate Concrete Surface Course 2"	B-19 Aggregate Base Course 8"
			C.Y.	C.Y.
1-A	9+00 - 17+50	L&R	*104.9	*84.0 335.8
			*104.9	*84.0 335.8

* 100 % State Participation

Excavation	12 C.Y.
Embankment	1589 C.Y.
Embankment + 12 %	1780 C.Y.

Sta. 9+00 to 17+50 - BROOKVILLE-PHILLIPSBURG ACCESS ROA


Seeding
end width
Sq. yds.
1040
1045.94
Sta. 9+00
1044.2
1047.19
Sta. 8+00
1044.5
1048.44
Sta. 7+00
1046.8
1049.37
Sta. 6+00
1047.5
1049.22
Sta. 5+00
1048.2
1048.25
Sta. 4+00
1046.4
1047.25
Sta. 3+00
1045.3
1046.50
Sta. 2+00
1044.8
1046.95
Sta. 1+00
1045.8
1048.13
Sta. 0+20
1046.9
1048.29
0-Section Sta. 0+10
1048.2
30 20 10 ℄ 10 20 30 40
1050
1040.56
Sta. 17+34.71
1041.02
End Work @ 12
1042.06
Sta. 17+00
1041.0
1044.25
Sta. 16+00
1041.8
1044.81
Sta. 15+00
1042.7
1044.56
Sta. 14+00
1042.5
1044.31
Sta. 13+00
1041.6
1044.06
Sta. 12+00
1041.7
1044.02
Sta. 11+00
1041.8
1044.71
Sta. 10+00
1042.8
40 30 20 10 ℄ 10 20 30
End area
cut Fill
Volume
cut Fill
Sta 17+34.71 20 0
12 9
Sta 17+00 0 13
0 143
Sta 16+00 0 64
0 211
Sta 15+00 0 50
0 168
Sta 14+00 0 41
0 209
Sta 13+00 0 72
0 246
Sta 12+00 0 61
0 221
Sta 11+00 0 57
0 204
Sta 10+00 0 53
0 178
Sta 9+00 0 43
0 230
Sta 8+00 0 81
224
Sta 7+00 0 40
0 131
Sta 6+00 0 31
0 102
Sta 5+00 0 24
0 35
Sta 4+00 0 49
0 72
Sta 3+00 0 44
0 141
Sta 2+00 0 32
0 81
Sta 1+00 0 12
0 6
Sta 0+20 0 23
0 4
0-Section Sta 0+10 0 0
MONTGOMERY COUNTY
MOT. 40-2.73
I-70-1(15)20
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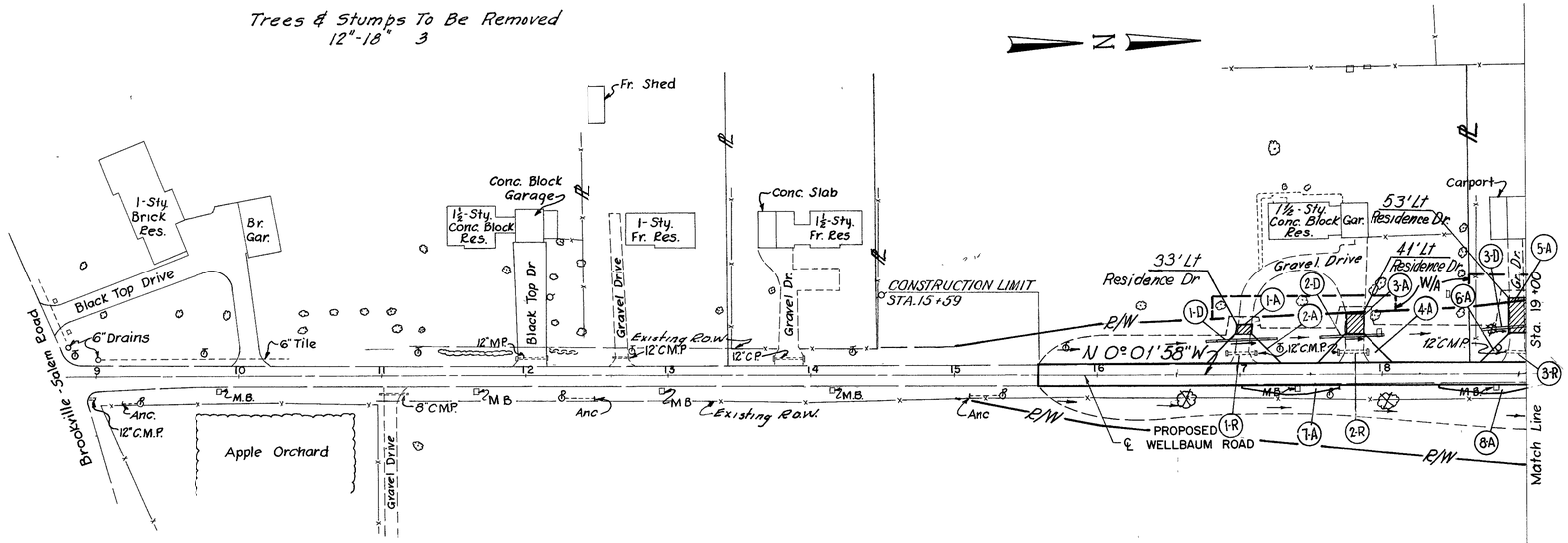
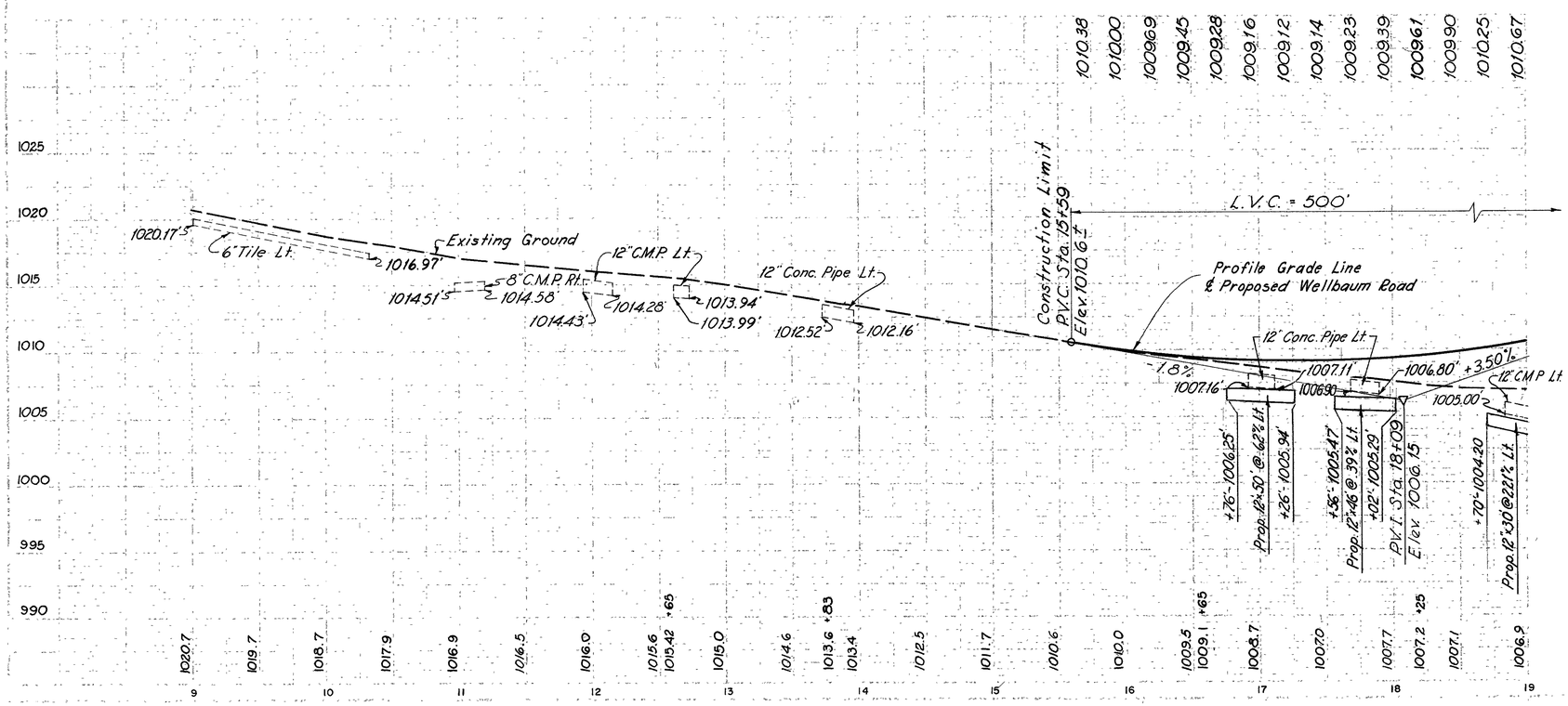
Trees & Stumps To Be Removed
12"-18" 3





Drawing Reference	Sheet No.			I-1 Class F-1 12" L.F.	E-12 Pipe Removed 15" & Under 12" L.F.	T-35 Asphaltic Concrete Surface Course Type "C" (70-85) C.Y.	B-19 Aggregate Base Course 5" C.Y.	B-19 Aggregate Base Course 8" C.Y.
1-D		16 + 76 - 17 + 26	L	50				
2-D		17 + 56 - 18 + 02	L	46				
3-D		18 + 70 - 19 + 18	L	48				
1-R		17 + 03	L		20			
2-R		17 + 80	L		20			
3-R		18 + 94	L		20			
1-A		17 + 03	L					2.1
2-A		17 + 03	L			4	9.9	
3-A		17 + 80	L					4.2
4-A		17 + 80	L			4	9.9	
5-A		18 + 94	L					7.1
6-A		18 + 94	L			4	9.9	
7-A		17 + 36	R				1.7	4.3
8-A		18 + 75	R				1.7	4.3
				144	60	12	33.1	22.0

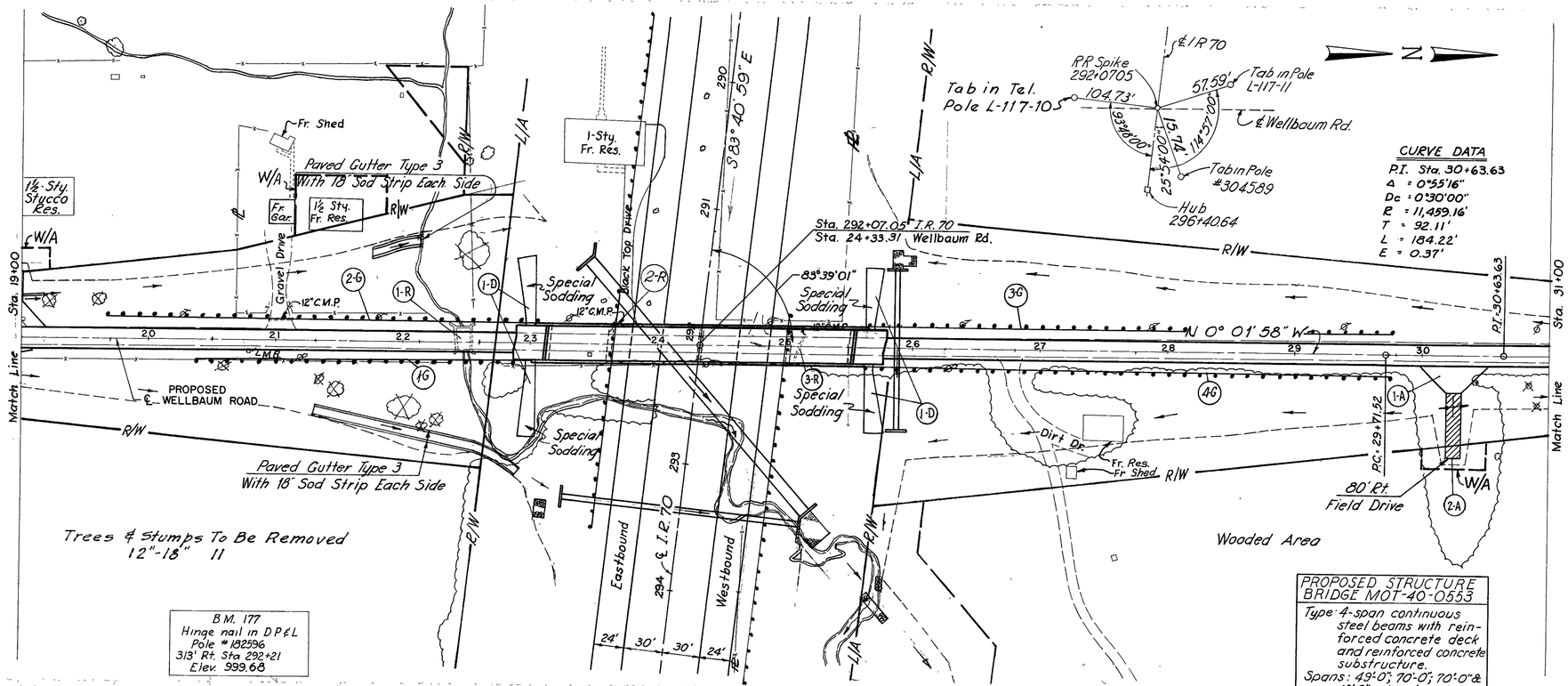
Excavation 389 C.Y.
Embankment 611 C.Y.
Embankment +12% 684 C.Y.

Wellbaum Road

STA. 9+00 TO STA. 19+00

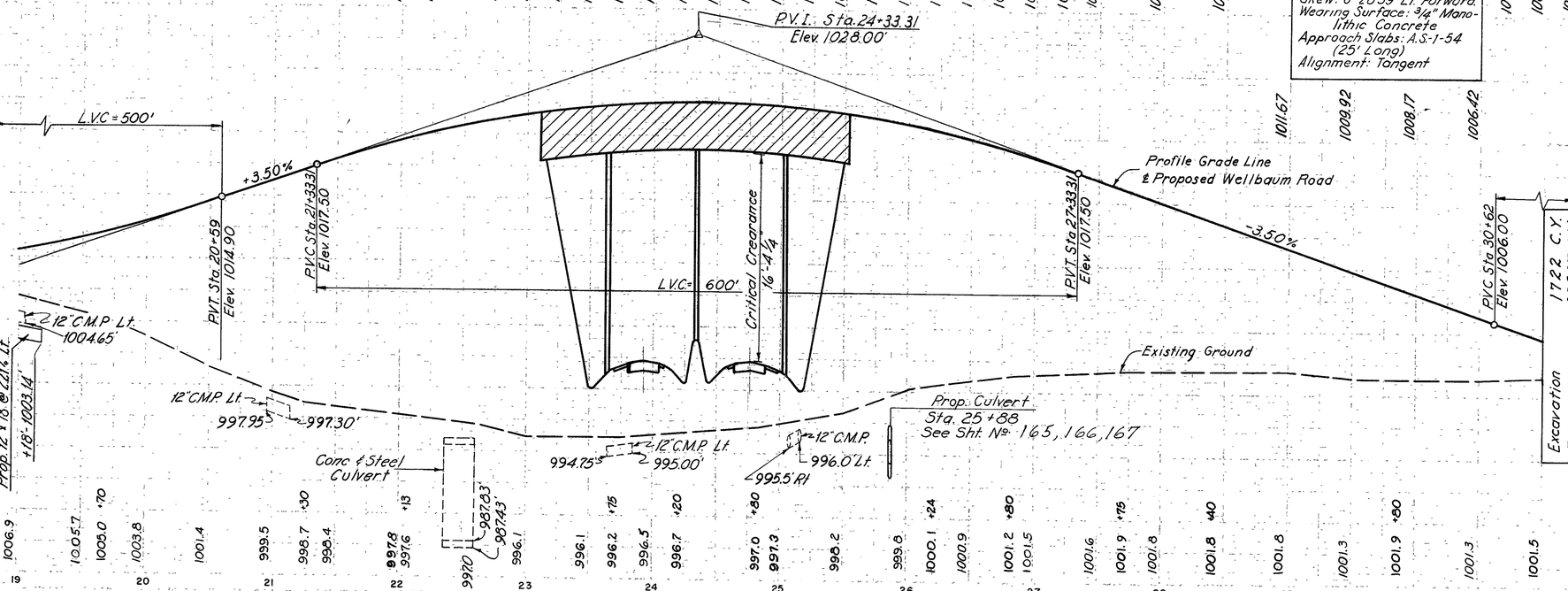
I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



CURVE DATA
P.I. Sta. 30+63.63
Δ = 0°55'16"
Dc = 0°30'00"
R = 11,459.16'
T = 92.11'
L = 184.22'
E = 0.37'

PROPOSED STRUCTURE
BRIDGE MOT-40-0553
Type 4-span continuous steel beams with reinforced concrete deck and reinforced concrete substructure.
Spans: 49'-0", 70'-0", 70'-0" & 49'-0" c. to c. bearings
Roadway: 24'-0" with 2'-3" safety curbs.
Load Frequency C.F.=130(57)
Skew: 6°20'59" Lt. Forward
Wearing Surface: ¾" Monolithic Concrete
Approach Slabs: A.S.-1-54 (25' Long)
Alignment: Tangent



Excavation	1722 C.Y.
Embankment	38837 C.Y.
Embankment +12%	43475 C.Y.

Drawing Reference	Sheet No.	REF NO.	STATION TO STATION	SIDE	I-1 Class A Asphaltic Concrete Surface Course 36" Type 'C' (76-85) L.F.	T-35 C.Y.	B-19 Aggregate Base Course 3" C.Y.	B-19 8" C.Y.	S-24 Removal of Existing Structures Lump	E-12 Pipe Removal and under 12" L.F.	I-14 Paved Gutter Type 3 L.F.	L-10 Sodding Special Berm & Slope Protection S.Y.	I-15 Guard Rail & Steel Beam Std. L.F.
		1-D	22+91 & 25+67	L&R								226	
		1-A	30+25	R		4	9.9						
		2-A	30+25	R				14.8					
		4-G	25+62.5 - 29+75	R									412.5
		1-R	22+48	L&R					Lump				
		2-R	23+64 - 23+84	L						20			
		3-R	25+07 - 25+15	L&R						20			
		1-G	20+37.5 - 23+00	R									262.5
		2-G	19+66.5 - 23+04	L									337.5
		3-G	25+66.5 - 29+79	L									412.5
					4	9.9	14.8	Lump	40		226	1,425	

Estimated Quantities

Wellbaum Road

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees & Stumps To Be Removed
12"-18" ϕ

N

CURVE DATA
P.I. = Sta. 30+63.63
Δ = 0°55'16"
Dc = 0°30'00"
R = 11,459.16'
T = 92.11'
L = 184.22'
E = 0.37'

Sta. 31+00
Match Line
P.T. 31+55.74
R/W
CONSTRUCTION LIMIT
STA. 34+00
Frame Shed
Gravel Dr
12" Tile
6.5'x6' Stone Hdwl
15" C.P.
Gravel Drive
7'x6' Stone Hdwl
Existing R.O.W.
N. 0°58'14" W
PROPOSED WELLBAUM ROAD
℄
Fr. & Metal Bldg.
Wooded Area

3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 4.0

1004.74 1003.99 1003.30 1002.68 1002.12 1001.62 1001.18 1000.81 1000.50 1000.24 999.99 999.74 999.49

1025
1020
1015
1010
1005
1000
995
990

L.V.C. = 250'
Profile Grade Line
℄ Proposed Wellbaum Road
-3.50%
-1.00%
P.V.I. Sta. 31+87
Elev. 1001.62
P.V.I. Sta. 33+12
Elev. 1000.37
Construction Limit
Sta. 34+00
Elev. 999.5±
Weak
Existing Ground
997.36'
12" Tile Lt.
997.04'
995.91'
15" Conc. Pipe Lt.
995.61'

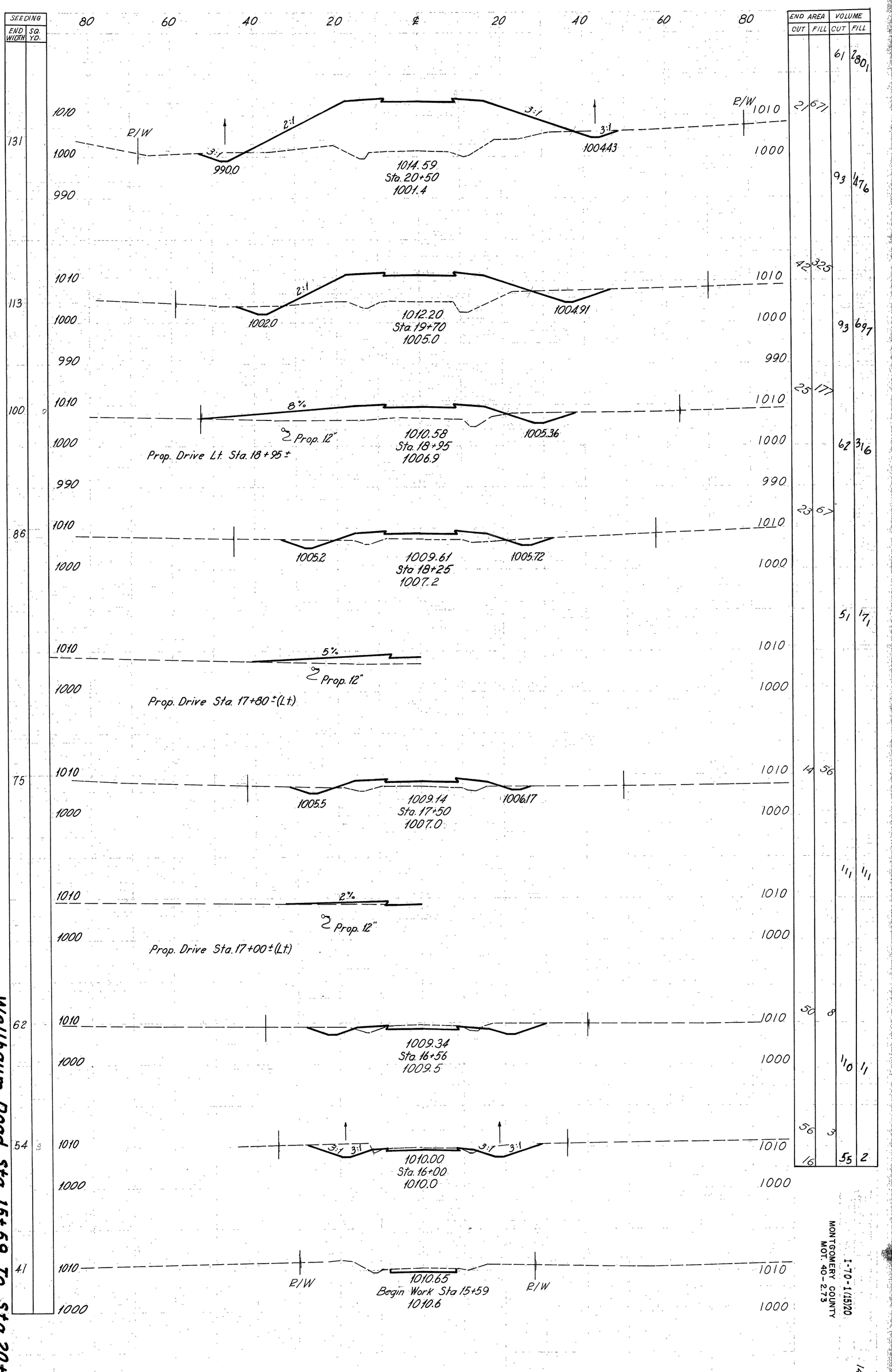
1001.5 1001.3 1001.3 1001.3 1000.9 1001.0 999.5 999.0 999.2 999.0 998.5 997.8 997.2 996.9 999.0 998.3 995.3

31 32 33 34 35 36 37 38 39 40

(None)

Excavation	404 C.Y.
Embankment	271 C.Y.
Embankment +12 %	304 C.Y.

Wellbaum Road
STA. 31+00 TO STA. 40+00


SEEDING
END WIDTH
SQ. YD.
80 60 40 20 ℄ 20 40 60 80
END AREA
CUT FILL
VOLUME
CUT FILL
1010
1000
990
P/W
3:1
2:1
990.0
1014.59
Sta. 20+50
1001.4
1004.43
131
61 280
21 671
93 476
1002.0
1012.20
Sta. 19+70
1005.0
1004.91
113
42 325
93 697
8%
2 Prop. 12"
Prop. Drive Lt. Sta. 18+95 ±
1010.58
Sta. 18+95
1006.9
1005.36
100
25 177
62 316
1005.2
1009.61
Sta 18+25
1007.2
1005.72
86
23 67
51 171
5%
2 Prop. 12"
Prop. Drive Sta. 17+80 ± (Lt.)
1005.5
1009.14
Sta. 17+50
1007.0
1006.17
75
14 56
11 11
2%
2 Prop. 12"
Prop. Drive Sta. 17+00 ± (Lt.)
1009.34
Sta. 16+56
1009.5
62
50 8
110 11
1010.00
Sta. 16+00
1010.0
54
56 3
55 2
16
1010.65
Begin Work Sta 15+59
1010.6
41
Wellbaum Road Sta. 15+59 To Sta. 20+50
I-70-1(15)20
MONTGOMERY COUNTY
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I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

Wellbaum Road Sta 21+30 To Sta 26+25

I-70-1(15)20
MONTGOMERY COUNTY
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END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
11	46	106	4
42	31	135	135
16	332	102	1513
53	527	141	1343
74	682	160	1958
59	941	157	3182
87	1209		

SEEDING END AREA	SEEDING SQ. YD.
30	
64	
84	
105	
128	
144	
157	
169	
188	

R/W
E/W
End Work Sta. 34+00
999.49
999.5

3:1
998.57
3:1
99933
1000.50
Sta. 33+00
1000.9

998.82
1002.12
Sta. 32+00
1001.3
99985

10%
999.07
1004.74
Sta. 31+00
1001.5
1001.0

Prop. Field Drive Pt. Sta. 30+25 ±
3:1
998.63
3:1
1000.4
1008.86
Sta. 29+80
1001.9

2:1
99752
2:1
1000.0
1011.66
Sta. 29+00
1001.8

R/W 92' Pt →
996.69
9997
1013.76
Sta. 28+40
1001.8

R/W 100' Pt →
995.79
999.38
1016.04
Sta. 27+75
1001.9

R/W 111' Pt →
3:1
994.47
2:1
998.91
3:1
1019.20
Sta. 26+80
1001.2
2:1
← E/W 93' Lt.

Wolfburg Road Sta. 36+80 To Sta. 34+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
MOT 40 - 2.73

Note: Areas bounded by construction Limits within the interchange shall be graded, shaped to drain, and seeded. Payment for this to be included in the unit price bid for Item L-9 seeding and protecting

For Ramp 'A' Sht. No.
Plan & Profile 149 & 150
X-Section 151

For Brookville - Salem Rd. Sht. No.
Plan & Profile 143-A & 144 & 145
X-Section 146 & 147 & 148

For I.R. 70 Sht. No.
Plan & Profile 33 & 34 & 35
X-Section 81 & 82 & 83 & 84 & 85

For Intersection Details
See Sht. No. 155

For Ramp 'A' & 'B' Nose Details
See Sht No 154

For Ramp 'B' Sht. No.
Plan & Profile 152
X-Section 153

For Intersection Details
See Sht No. 155

Nose
Sta 15+25.05 Ramp 'A'

Ramp 'A' Nose
Sta 308+69.37 I.R. 70

Ramp 'B' Nose Sta. 7+99.05
℄ I.R. 70 Sta. 306+67.23

STATION EQUATION
STA. 311+61.63 (Back)
STA. 306+10.10 (Ahead)

℄ Ramp 'A'

℄ I.R. 70

See note above for work in this area

See note above for work in this area

Ramp "B" Terminal
Ramp Sta. 15+80.48
℄ Brk.-Sal. Sta. 57+25

℄ Proposed Brookville-Salem Rd.

Bridge No. MOT.-40-0594

Sta. 313+86.32 ℄ I.R. 70
Sta. 65+09.96 ℄ Brookville-Salem Rd.

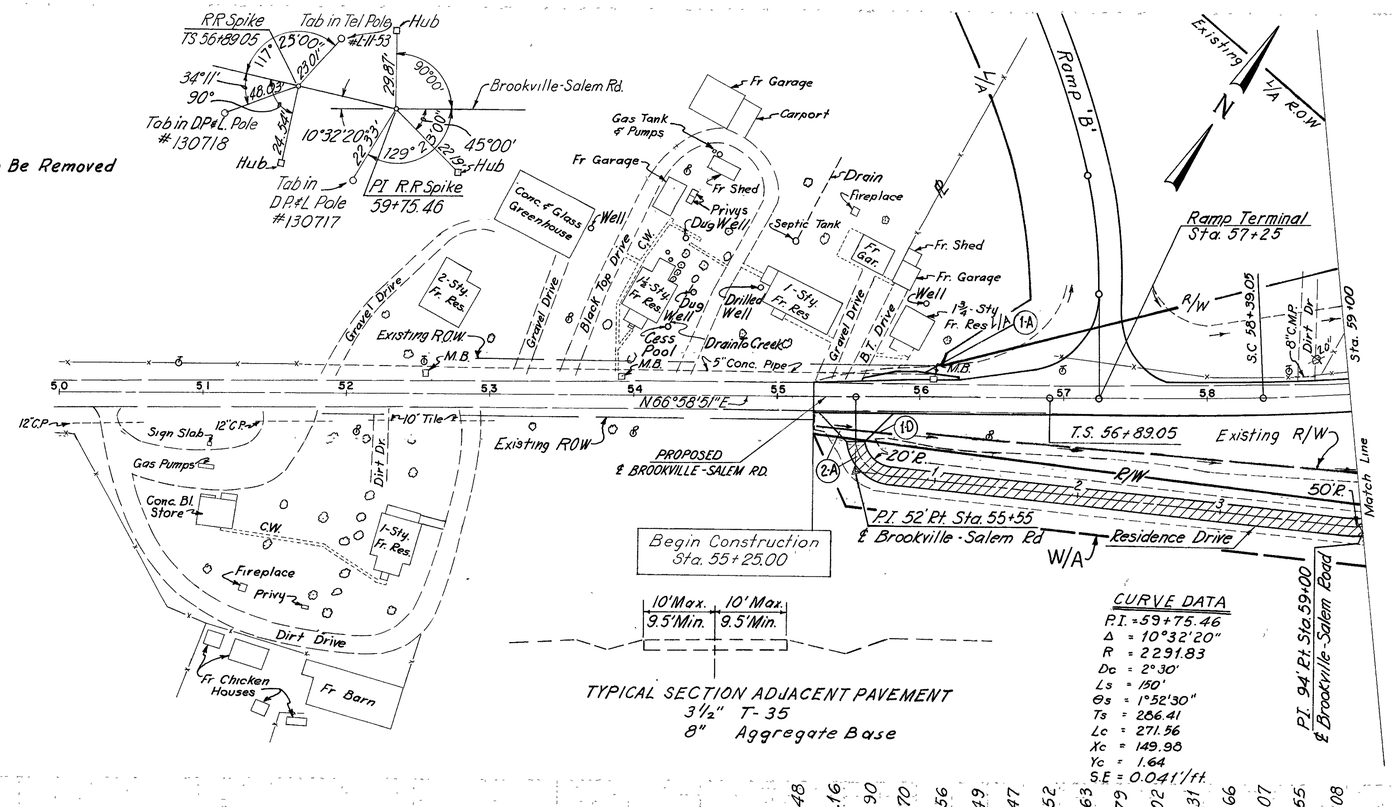
Ramp 'A' Terminal
Ramp 'A' 0+00
℄ Brk.Sal Sta. 69+80

S.R. 49 (BROOKVILLE-SALEM ROAD) SCHEMATIC PLAN

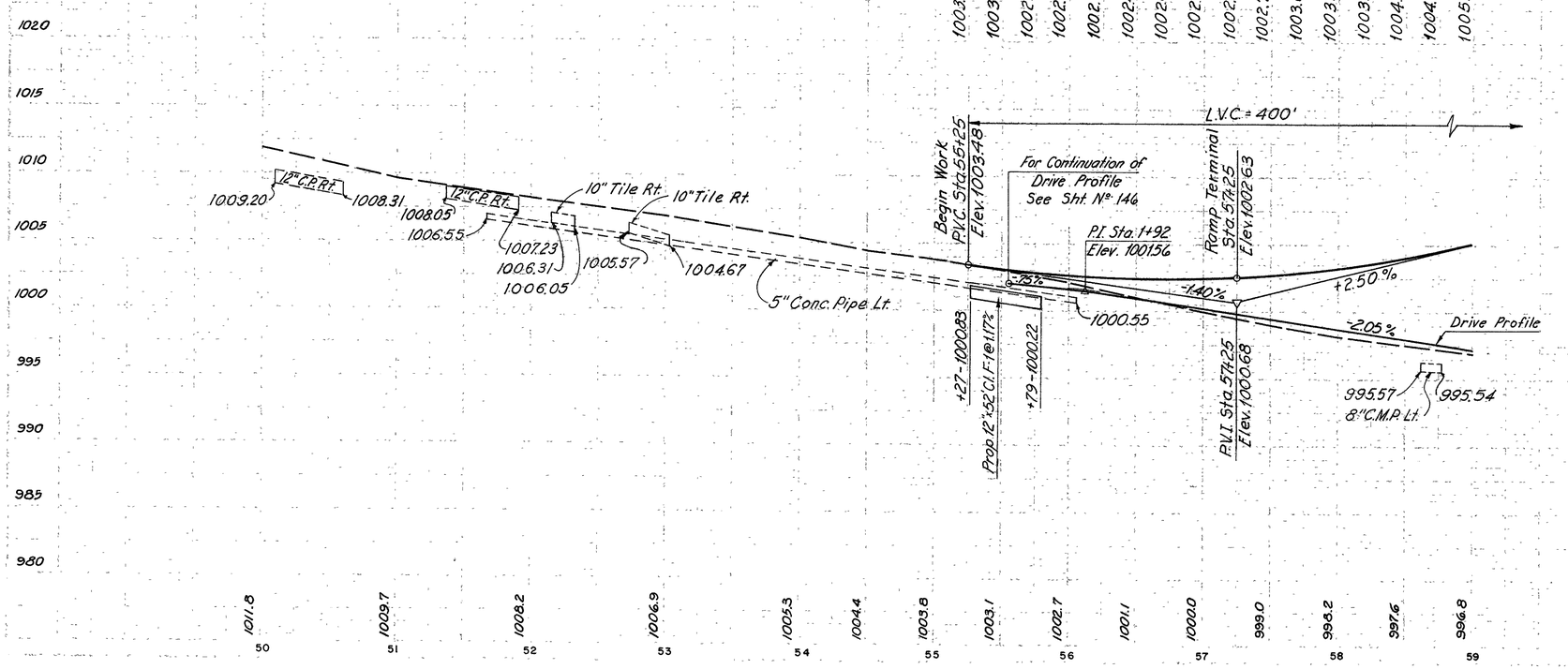
I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

Trees & Stump To Be Removed
18"-24"..... 1



CURVE DATA
P.I. = 59+75.46
Δ = 10°32'20"
R = 2291.83
Dc = 2°30'
Ls = 150'
Θs = 1°52'30"
Ts = 286.41
Lc = 271.56
Xc = 149.98
Yc = 1.64
S.E. = 0.041'/ft.



ESTIMATED QUANTITIES

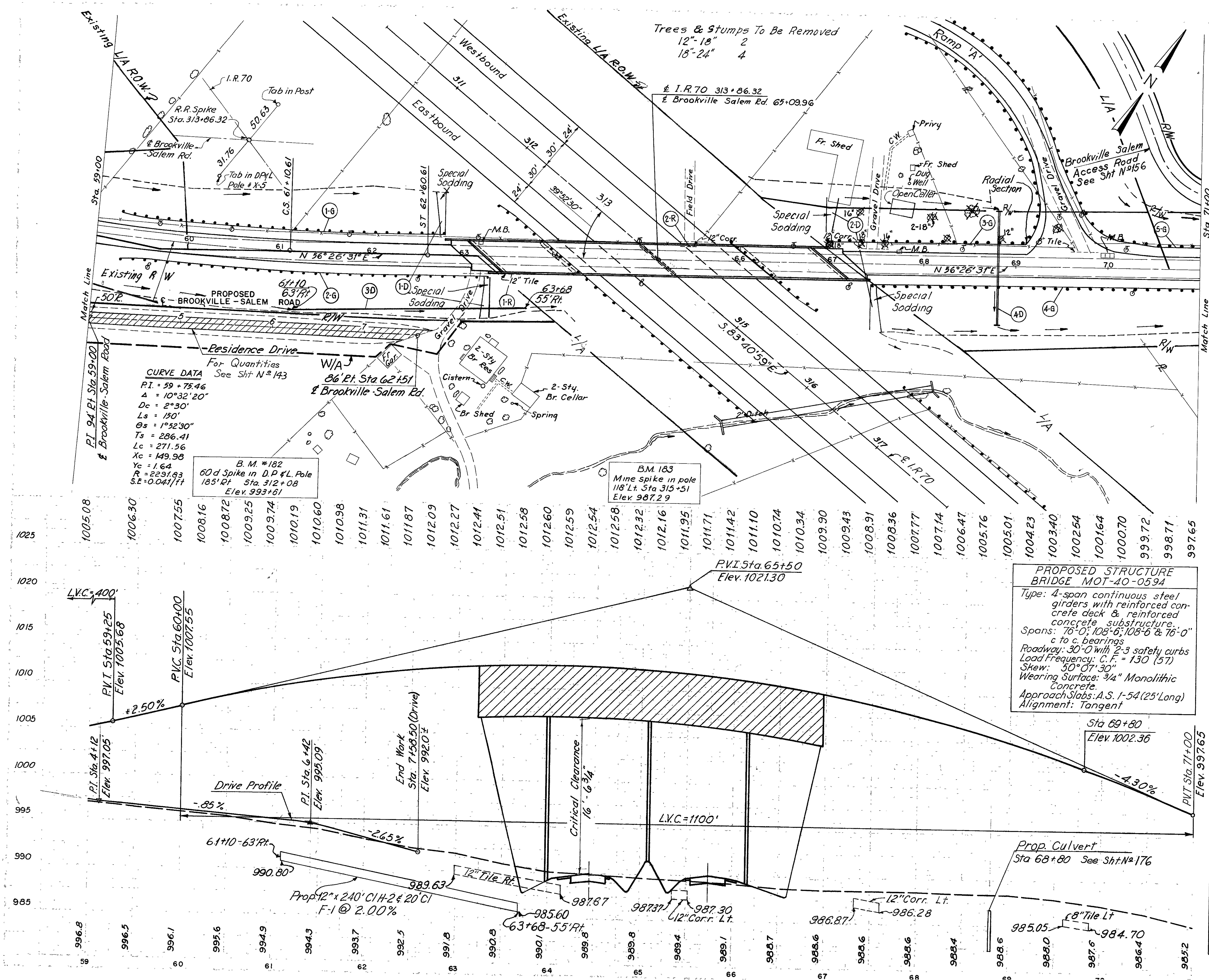
REF NO.	STATION TO STATION		SIDE	T-35 Asphaltic Concrete Surface Course Type C	B-19 Aggregate Base Course	1-1 Class F-1 12"
				C.Y.	C.Y.	C.Y.
1-A	55+92	L		1.7	4.3	
2-A	55+55 - 62+51	R		4	9.9	216.3
1-D	55+27 - 55+79	R				52
				5.7	14.2	216.3 52

Excavation	348 C.Y.
Embankment	2880 C.Y.
Embankment + 12%	3226 C.Y.

Brookville-Salem Road

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



CURVE DATA

P.I. = 59 + 75.46
Δ = 10°32'20"
Dc = 2°30'
Ls = 150'
θs = 1°52'30"
Ts = 286.41
Lc = 271.56
Xc = 149.98
Yc = 1.64
R = 2291.83
S.E = 0.041/ft

B. M. #182
60 d Spike in D.P &L. Pole
185' Rt Sta. 312+08
Elev. 993+61

B.M. 183
Mine spike in pole
118' Lt. Sta 315+51
Elev. 987.29

PROPOSED STRUCTURE
BRIDGE MOT-40-0594

Type: 4-span continuous steel girders with reinforced concrete deck & reinforced concrete substructure.
Spans: 76'-0"; 108'-6"; 108'-6" & 76'-0" c to c. bearings
Roadway: 30'-0" with 2-3 safety curbs
Load Frequency: C.F. = 130 (57)
Skew: 50°07'30"
Wearing Surface: ¾" Monolithic Concrete.
Approach Slabs: A.S. 1-54 (25' Long)
Alignment: Tangent

Drawing Reference	Sheet No.

ESTIMATED QUANTITIES

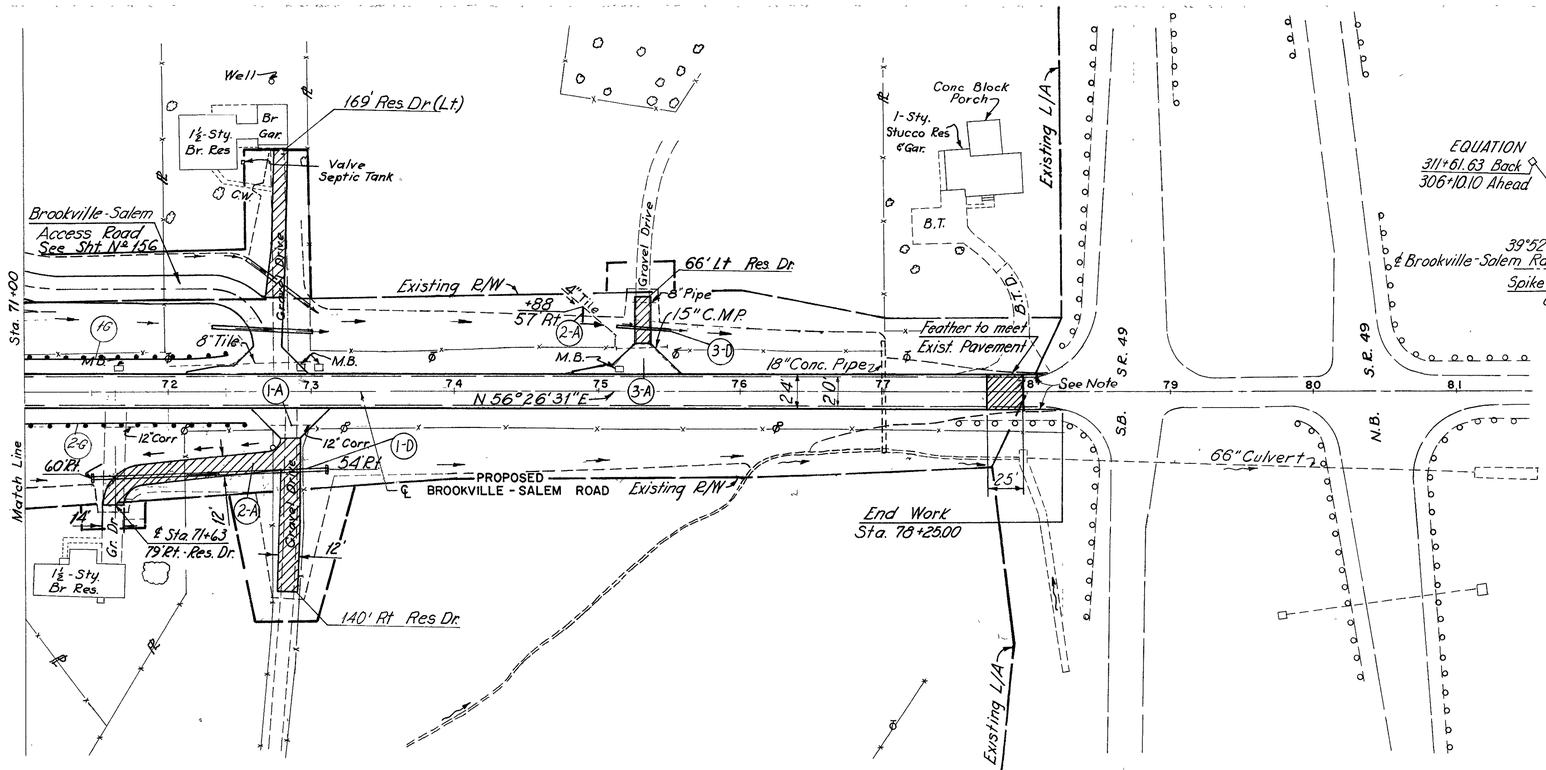
REF NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 M-6.6 (d)	I-1 Pipe Class H-2	I-1 Pipe Class F-1	I-2 Masonry Head-Walls	I-15 Guard Rail Steel Beam Deep	E-12 Pipe Removed 15" & Under	L-10 Sodding Special Berm & Slope Prot.	L-10 Sodding
			21"	12"	12"	Type 'A'	Standard			
			L.F.	L.F.	L.F.	C.Y.	L.F.	L.F.	S.Y.	S.Y.
1-D	62+77 & 63+26	L&R							40	
2-D	66+96 & 67+45	L&R							54	
3-D	61+10 - 63+68	R		204	20					
4-D	68+80	L&R	124			8.8				5.3
1-G	59+25 - 62+75	L					350			
2-G	59+27 - 63+27	R					400			
3-G	66+94 - 69+10	L					225			
4-G	67+42 - 71+00	R					362.5			
5-G	70+55 - 71+00	L					45			
1-R	62+99 - 64+15	R						116		
2-R	65+35 - 65+53	R						18		
			124	204	20	8.8	1382.5	134	94	5.3

Excavation	1076 C.Y.
Embankment	43,198 C.Y.
Embankment +12%	48,382 C.Y.

Brookville-Salem Road

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73



NOTE:
77+98 - to Radius returns additional 2' width of bituminous pavement will be added to both sides of existing pavement and meet existing conditions. See Sheet No. 8-A section 'O' for pavement buildup.

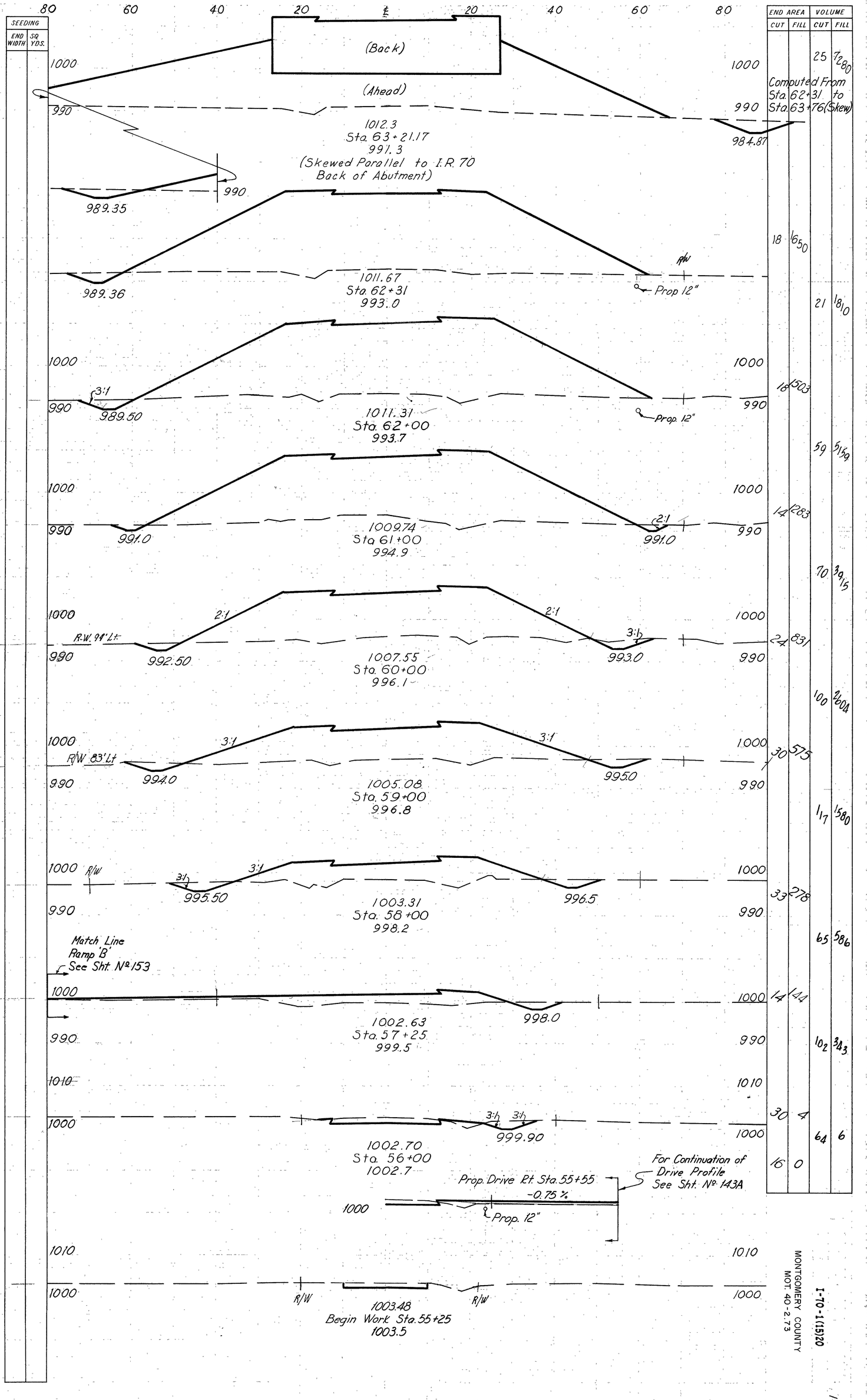
ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	I-1 Class F-1	T-35 Asphaltic Concrete Surface Course 1½" Type "C" (385 #/S)	B-19 Aggregate Base Course 5" 8"	I-15 Guard Rail Steel Type Deep Standard	I-2 Masonry Headwalls Type "E"	I-1 Class F-1 6"
			L.F.	L.F. C.Y.	C.Y. C.Y.	L.F.	C.Y.	L.F.
1-D	71+47 - 73+13	R	166				.72	
2-D	74+88 -	L						10
3-D	75+13 - 75+51	L	38					
1-A	72+86	R		40	9.9			
2A	72+86	R			69.9			
3-A	75+29	L		46	11.5 9.8			
1-G	71+00 - 72+42.5	L				142.5		
2-G	71+00 - 72+50.4	R				150		
			38	166 8.6	21.4	79.7	292.5	.72 10

Excavation	491 C.Y.
Embankment	10521 C.Y.
Embankment +12%	11784 C.Y.

Brookville - Salem Road

STA. 71+00 TO STA. 81+50


80 60 40 20 ℄ 20 40 60 80
SEEDING
END WIDTH
SQ YDS.
END AREA
CUT FILL
VOLUME
CUT FILL
(Back)
(Ahead)
1000
990
1012.3
Sta. 63+21.17
991.3
(Skewed Parallel to I.R. 70
Back of Abutment)
989.35
984.87
Computed From
Sta. 62+31 to
Sta. 63+76 (Skew)
25 72 80
1011.67
Sta. 62+31
993.0
989.36
Prop 12"
18 16 50
21 18 10
3:1
989.50
1011.31
Sta. 62+00
993.7
18 15 03
59 51 59
991.0
1009.74
Sta. 61+00
994.9
14 12 83
70 39 15
2:1
R.W. 91' Lt.
992.50
993.0
1007.55
Sta. 60+00
996.1
24 8 31
100 26 04
R/W 83' Lt
994.0
995.50
1005.08
Sta. 59+00
996.8
30 5 75
117 15 80
R/W
996.5
1003.31
Sta. 58+00
998.2
33 2 78
65 58 6
Match Line
Ramp 'B'
See Sht. No 153
998.0
1002.63
Sta. 57+25
999.5
14 1 44
102 34 3
1010
999.90
1002.70
Sta. 56+00
1002.7
30 4
64 6
16 0
For Continuation of
Drive Profile
See Sht. No 143A
Prop. Drive Rt. Sta. 55+55
-0.75 %
Prop. 12"
R/W
1003.48
Begin Work Sta. 55+25
1003.5
I-70-1(15)20
MONTGOMERY COUNTY
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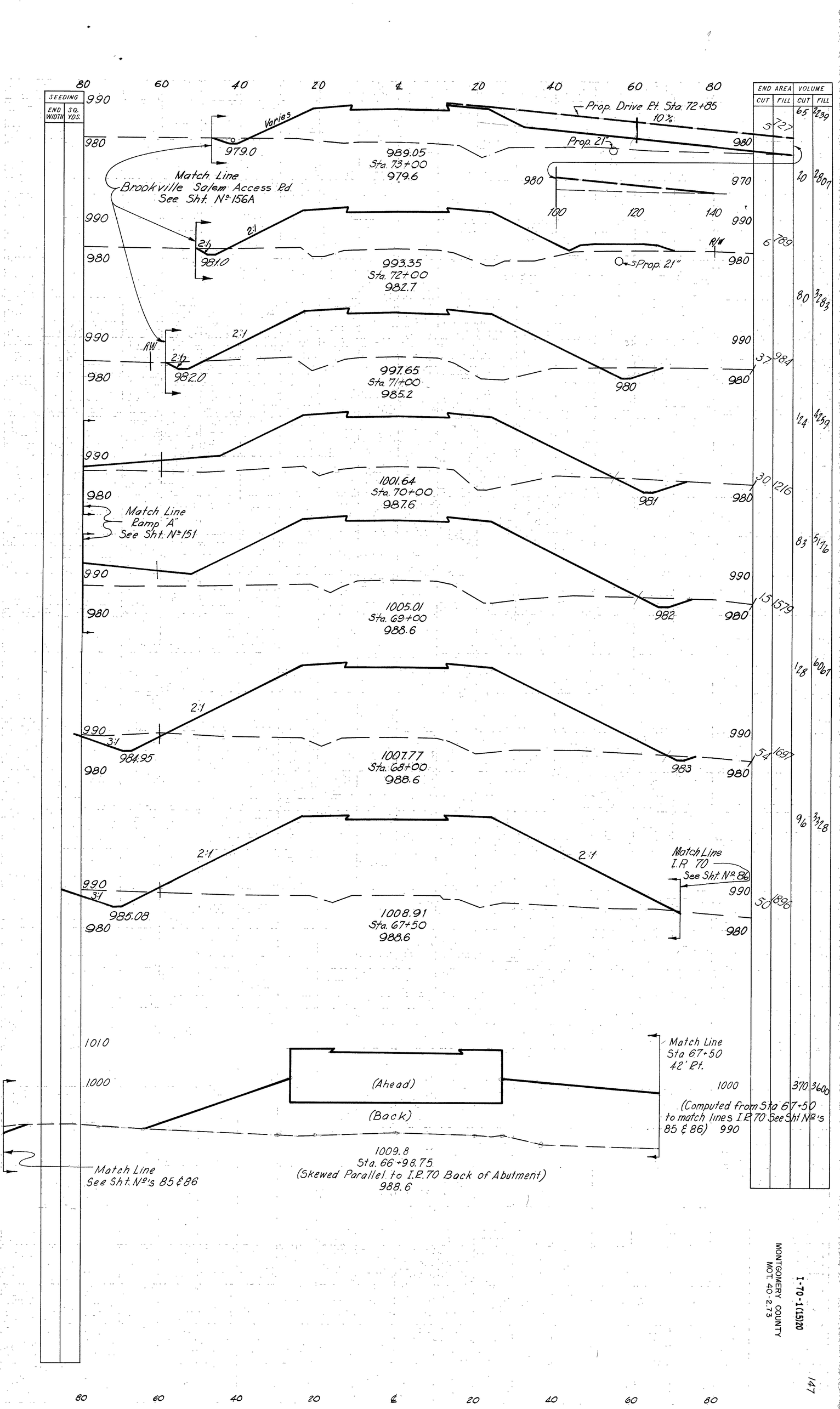


MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(15)20

I-70-1(15)20

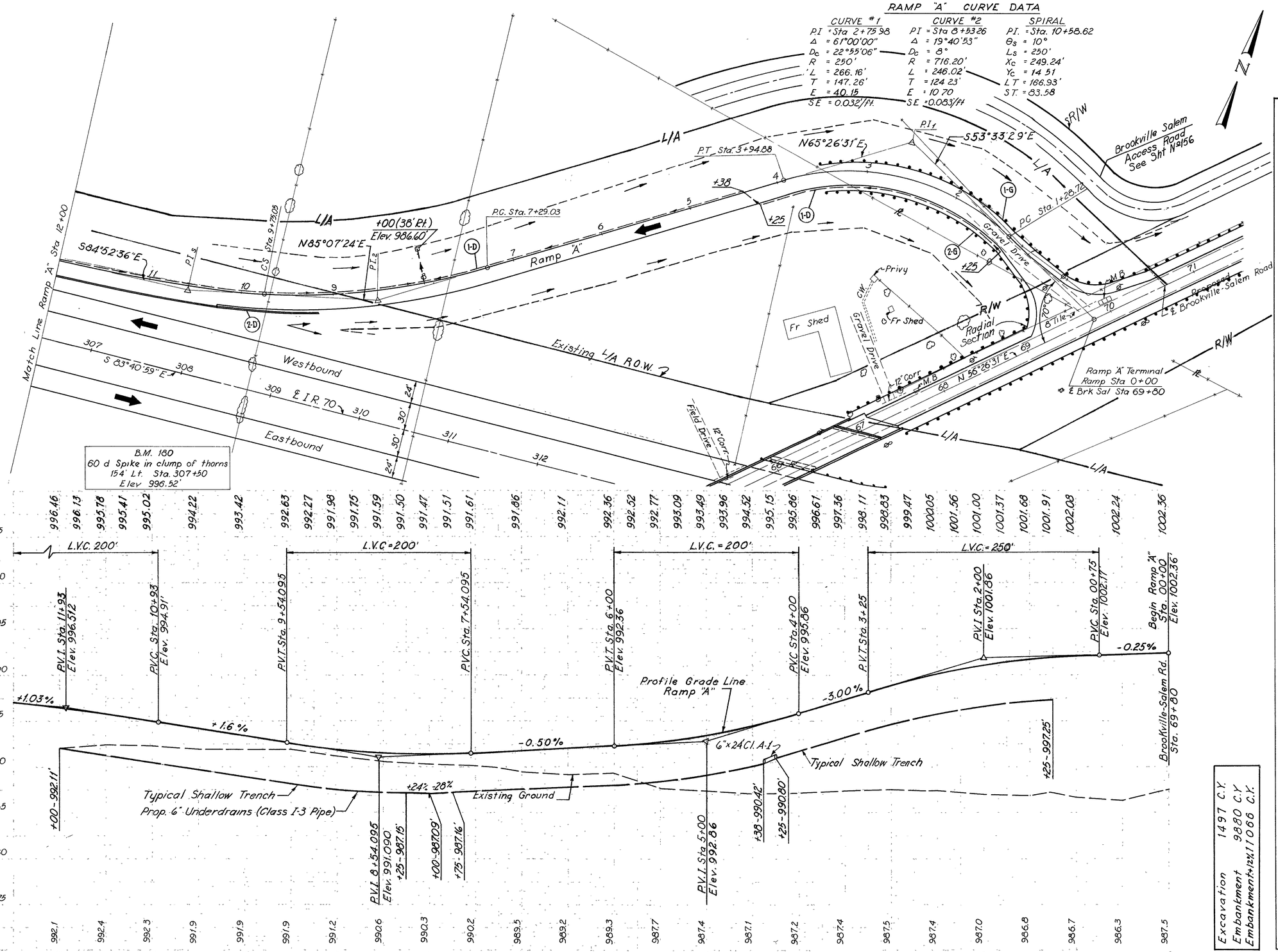
MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

RAMP "A" CURVE DATA

CURVE #1	CURVE #2	SPIRAL
P.I = Sta 2+75.98	P.I = Sta 8+53.26	P.I. = Sta. 10+58.62
Δ = 61°00'00"	Δ = 19°40'53"	θ_s = 10°
D_c = 22°55'06"	D_c = 8°	L_s = 250'
R = 250'	R = 716.20'	X_c = 249.24'
L = 266.16'	L = 246.02'	Y_c = 14.51
T = 147.26'	T = 124.23'	L T = 166.93'
E = 40.15	E = 10.70	S T. = 83.58
S E = 0.032'/Ft.	S E = 0.083'/Ft.	



ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	I-1 Pipe Class A-1 M-6.8(6) 6" L.F.	I-1 Pipe Class I-3 Underdrains Shallow 6" L.F.	I-1 Pipe Class I-3 Underdrains Deep 6" L.F.	I-1 Pipe Class F-1 8" L.F.	I-5 Pipe Specials A-1 6"x60°&16°x16° Bend Ea.	I-5 Pipe Specials I-3 Standard Ea.	I-12 Special Concrete Curb L.F.	I-15 Guard Rail Steel Beam Deep L.F.
1-D	1+25 - 12+00	L&R	24	1,088		10	2	1	283	
2-D	9+17 - 12+00	L								
1-G	0+24 - 3+48	R								400
2-G	0+24 - 3+60	L								300
			24	1,088		10	2	1	283	700

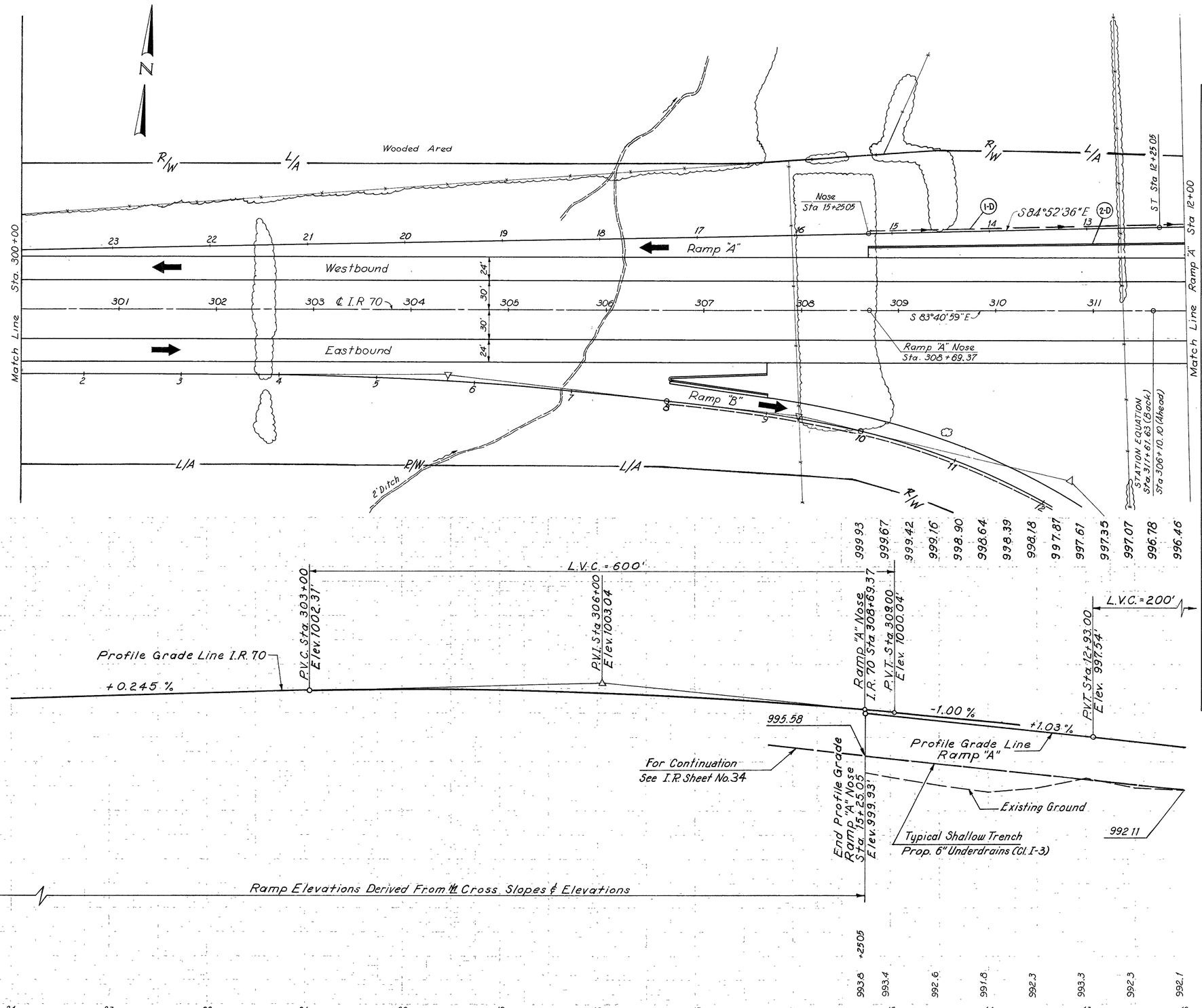
Excavation	1497 C.Y.
Embankment	9880 C.Y.
Embankment+12%11066 C.Y.	

Drawing Reference Sheet No.

B.M. 180 INTERCHANGE RAMP "A" Sta. 00+00 To Sta. 12+00

I-70-1(15)20

MONTGOMERY COUNTY
MOT. 40-2.73

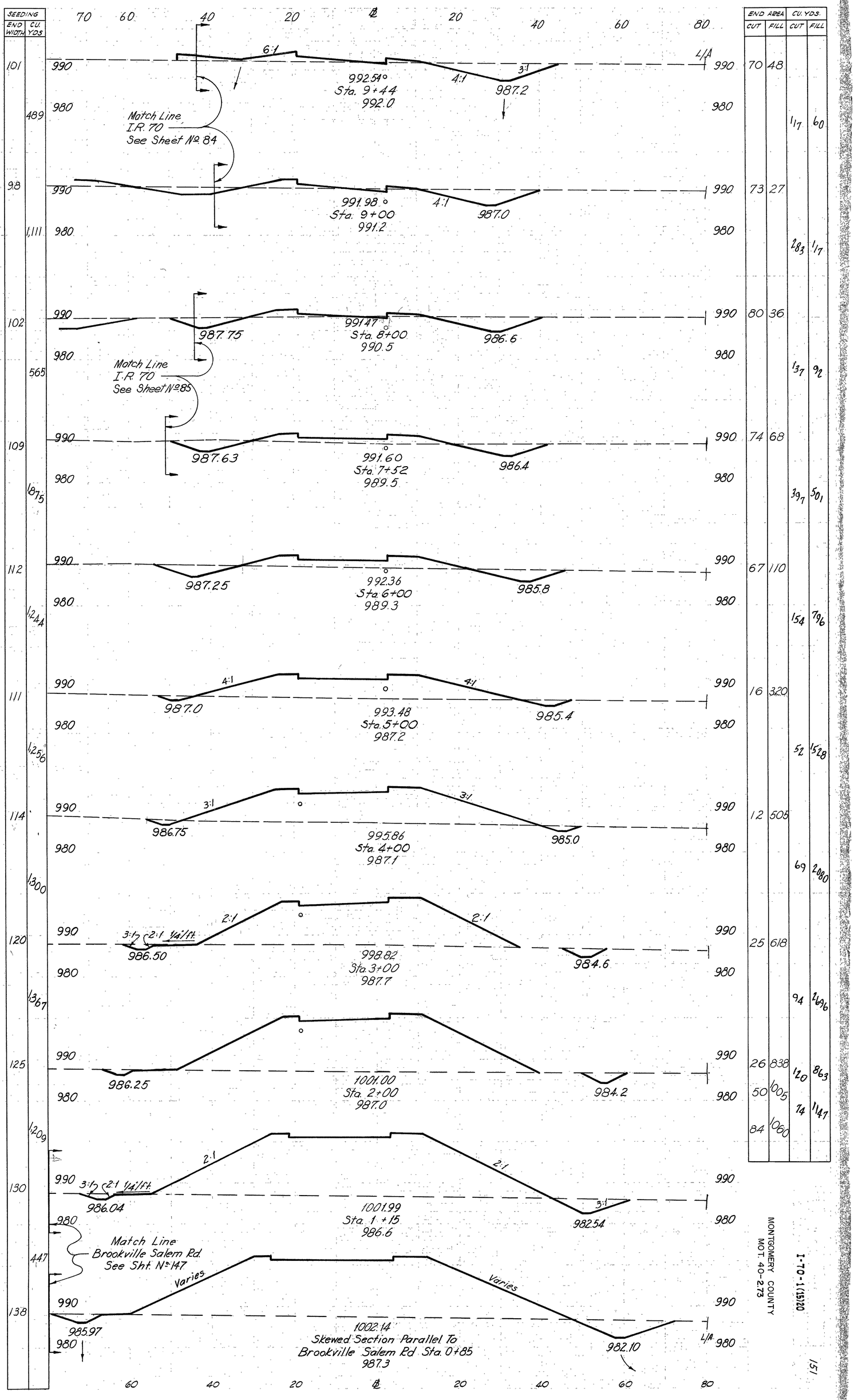


ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	I-1 Class I-3 Underdrains 6" Shallow Deep L.F.	I-12 Special Concrete Curb L.F.
			L.F.	L.F.
1-D	12+00 - 15+25	L	325	
2-D	12+00 - 15+25	L		325
				325

Excavation 1497 C.Y.
Embankment 9880 C.Y.
Embankment+12%-1106 C.Y.

S.R. 40 INTERCHANGE - RAMP "A" - Sta. 12+00 To Sta. 23+03



MONTGOMERY COUNTY
MOT. 40-2.73

I-70-1(15)30

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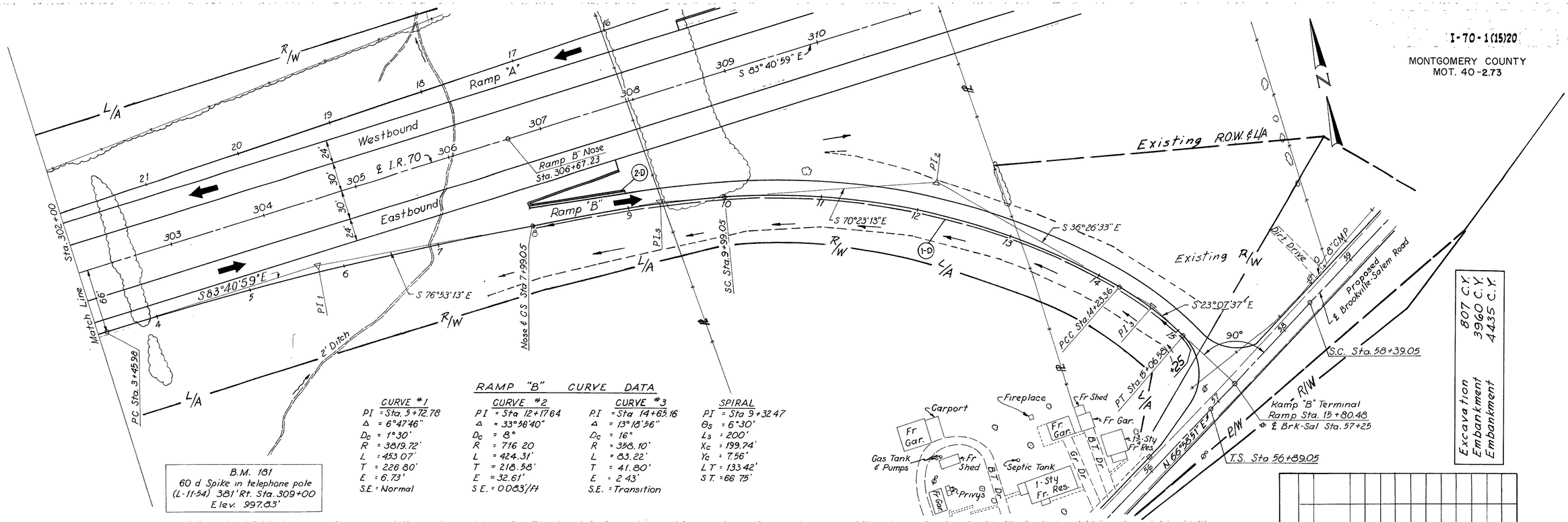
I-70-1(15)20

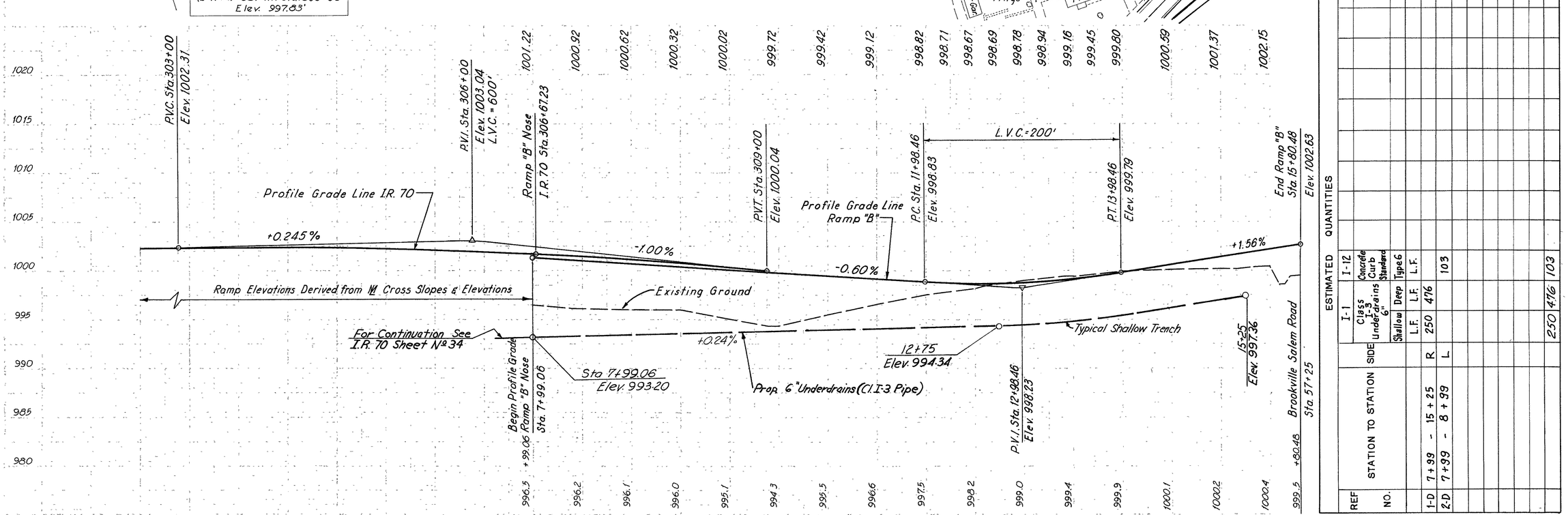
MONTGOMERY COUNTY
MOT. 40-2.73



Excavation	807 C.Y.
Embankment	3960 C.Y.
Embankment	4435 C.Y.

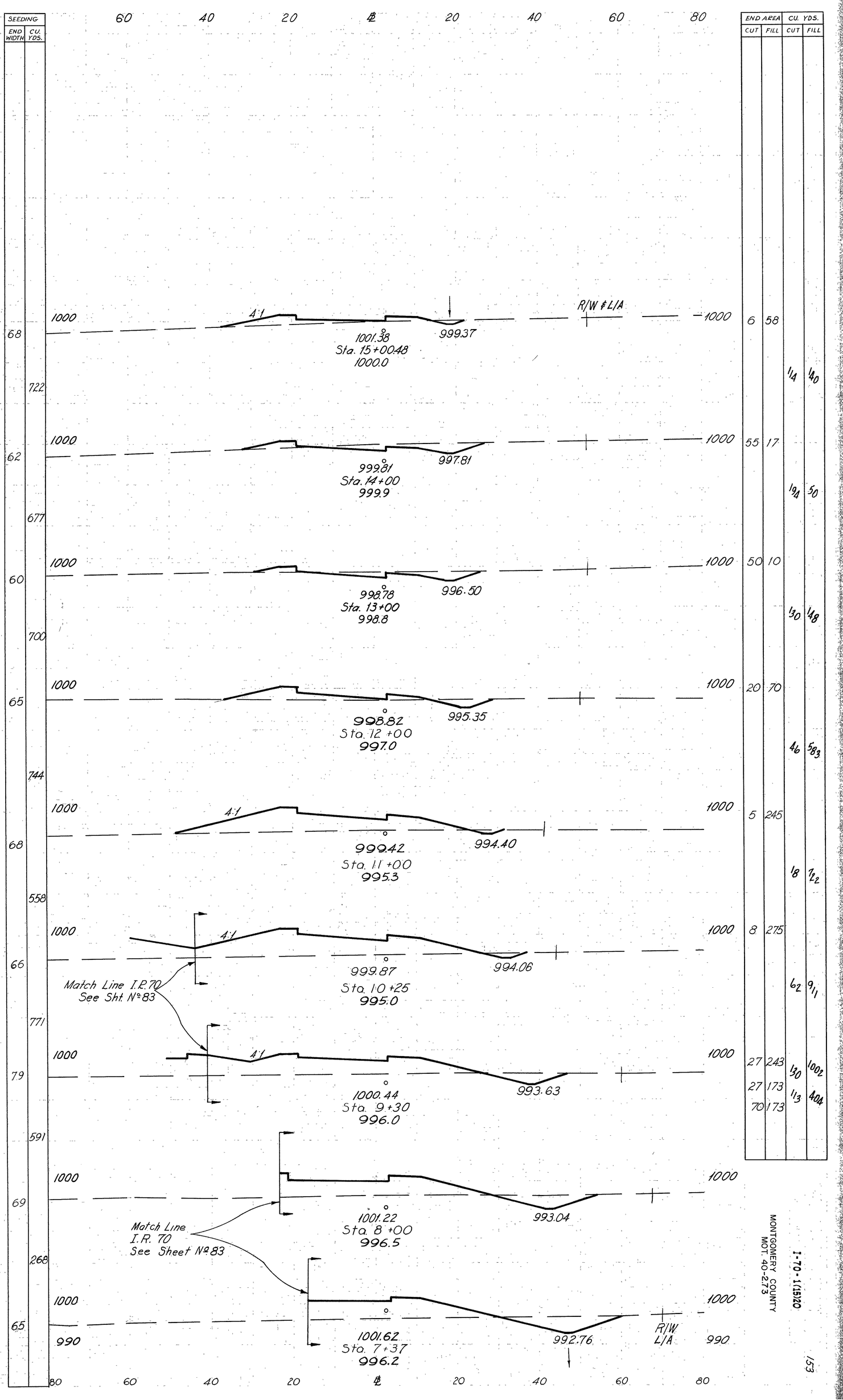
RAMP "B" CURVE DATA

CURVE #1	CURVE #2	CURVE #3	SPIRAL
PI = Sta. 5+72.78	PI = Sta 12+17.64	PI = Sta 14+65.16	PI = Sta 9+32.47
Δ = 6°47'46"	Δ = 33°58'40"	Δ = 13°18'56"	θs = 6°30'
Dc = 1°30'	Dc = 8°	Dc = 16°	Ls = 200'
R = 3819.72'	R = 716.20	R = 358.10'	Xc = 199.74'
L = 453.07'	L = 424.31'	L = 83.22'	Yc = 7.56'
T = 226.80'	T = 218.58'	T = 41.80'	LT = 133.42'
E = 6.73'	E = 32.61'	E = 2.43'	ST = 66.75'
S.E. = Normal	S.E. = 0.083'/ft	S.E. = Transition	



ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	I-1 Class 3 Underdrains 6" Shallow L.F.	I-1 Class 3 Underdrains 6" Deep L.F.	I-12 Concrete Curb Standard Type 6 L.F.
1-D	7+99 - 15+25	R	250	476	103
2-D	7+99 - 8+99	L			
			250	476	103


SEEDING
END WIDTH
CU. YDS.
60 40 20 ℄ 20 40 60 80
END AREA CUT FILL
CU. YDS. CUT FILL
R/W ℄ L/A
1000
4:1
1001.38
Sta. 15+00.48
1000.0
999.37
68
722
6 58
1/4 40
997.81
999.81
Sta. 14+00
999.9
62
677
55 17
1/4 50
996.50
998.78
Sta. 13+00
998.8
60
700
50 10
1/30 148
995.35
998.82
Sta. 12+00
997.0
65
744
20 70
46 583
994.40
999.42
Sta. 11+00
995.3
68
558
5 245
1/8 1/2
994.06
999.87
Sta. 10+25
995.0
66
771
8 275
6/2 9/1
Match Line I.R. 70
See Sht. No. 83
993.63
1000.44
Sta. 9+30
996.0
79
591
27 243
1/30 100/2
27 173
1/3 40/4
70 173
993.04
1001.22
Sta. 8+00
996.5
69
268
Match Line
I.R. 70
See Sheet No. 83
992.76
1001.62
Sta. 7+37
996.2
65
990
R/W
L/A
MONTGOMERY COUNTY
MOT. 40-2.73
I-70-1(15)20
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FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
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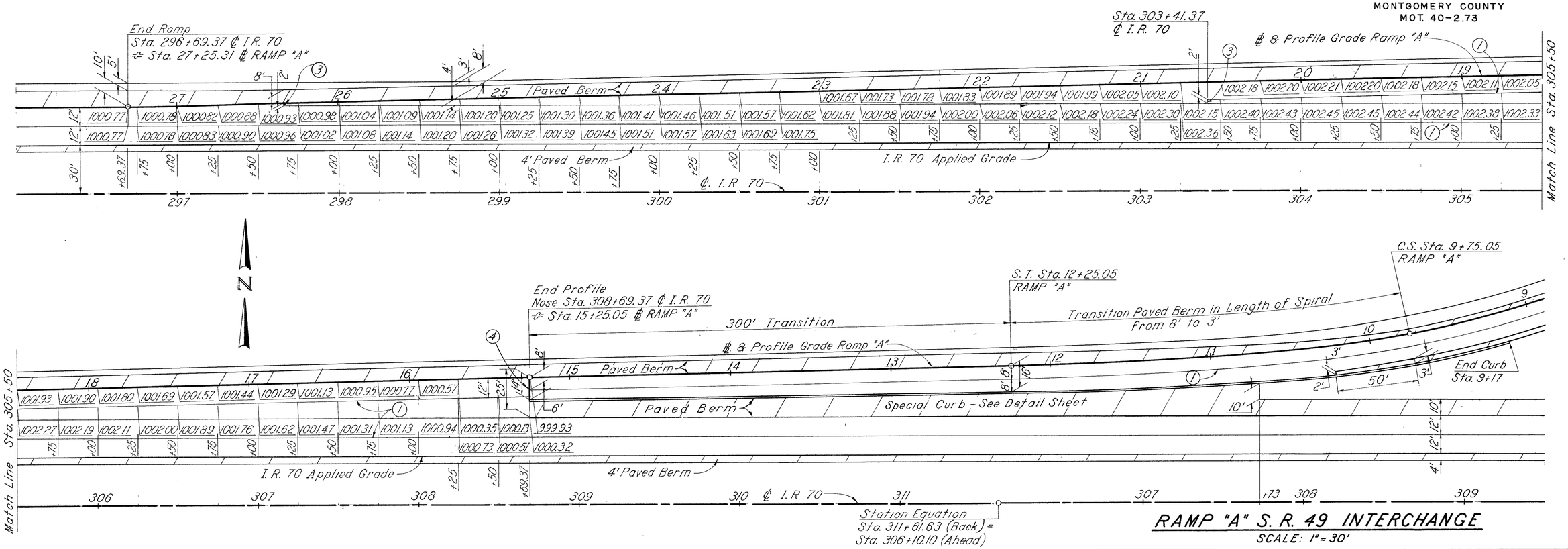
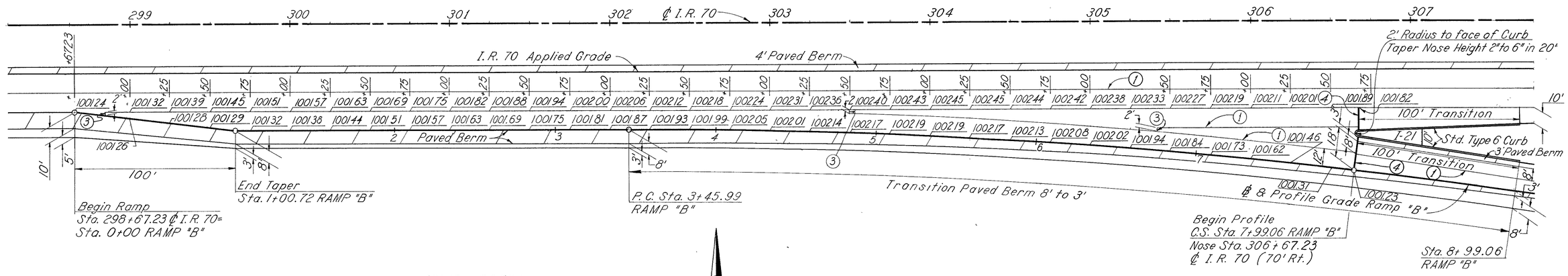


RAMP "A" S.R. 49 INTERCHANGE

SCALE: 1" = 30'



RAMP "B" S.R. 49 INTERCHANGE

SCALE: 1" = 30'

JOINT LEGEND

① - Standard Longitudinal Joint
② - Standard Key Joint w/o Tie Bars
③ - Expansion Joint w/o Dowels
④ - Expansion Joint with Dowels

NOTE:
Along Speed Change Lanes with Paved Berms of less than 10 feet, the Paved Berm build-up shall conform to that of the Ramp Typical Section.

RAMP DETAILS - S.R. 49 INTERCHANGE RAMPS "A" & "B"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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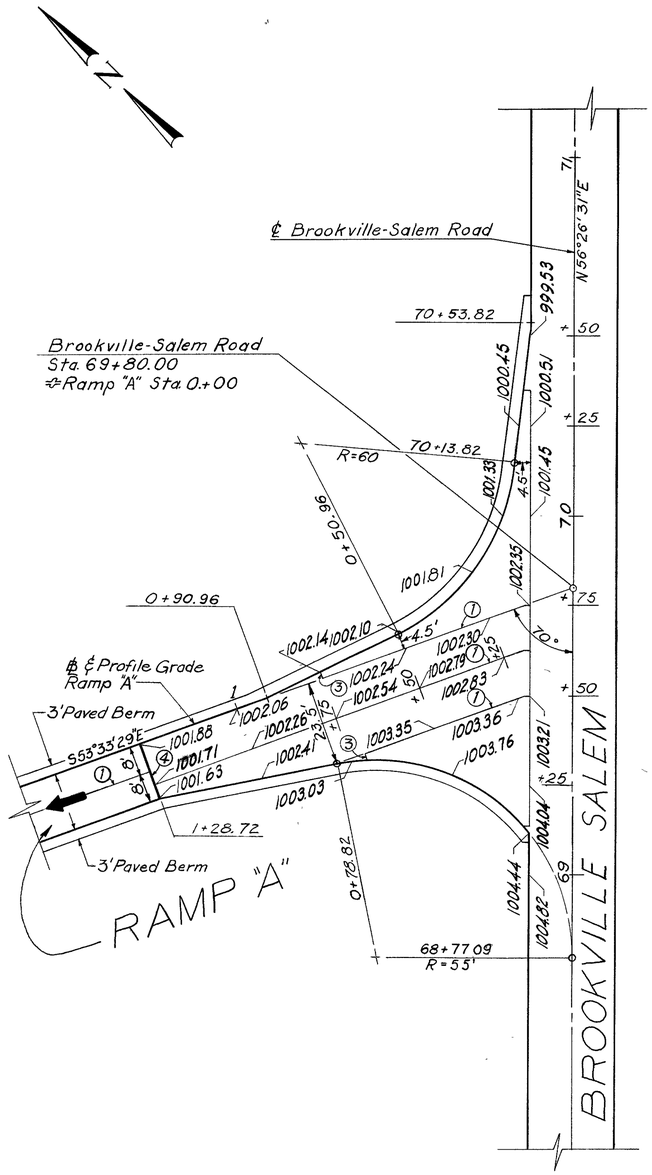
MONTGOMERY COUNTY
MOT. 40-2.73

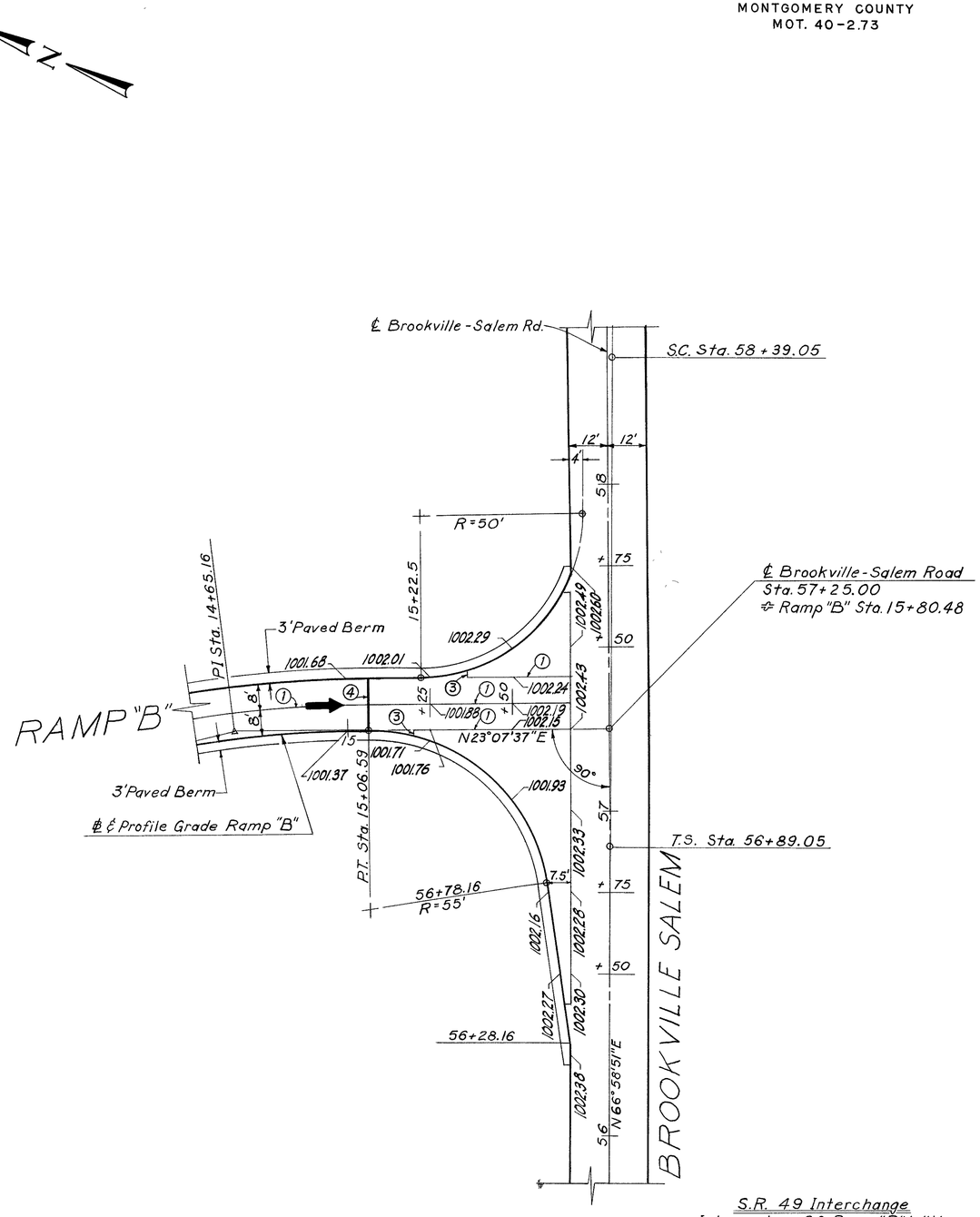


LEGEND

① - Standard Longitudinal Joint
② - Standard Key Joint w/o Tie Bars
③ - Expansion Joint w/o Dowels
④ - Expansion Joint with Dowels

Notes: Key Joints Without Dowels Shall Be In Line With Edge Of Pavement.
All Stubs To Be 2' Unless Otherwise Noted.

S.R. 49 Interchange
Intersection Of Ramp "A" With Brookville - Salem Road.
Scale: 1" = 20'



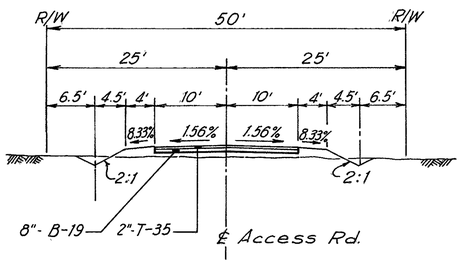
S.R. 49 Interchange
Intersection Of Ramp "B" With Brookville - Salem Road.
Scale: 1" = 20'

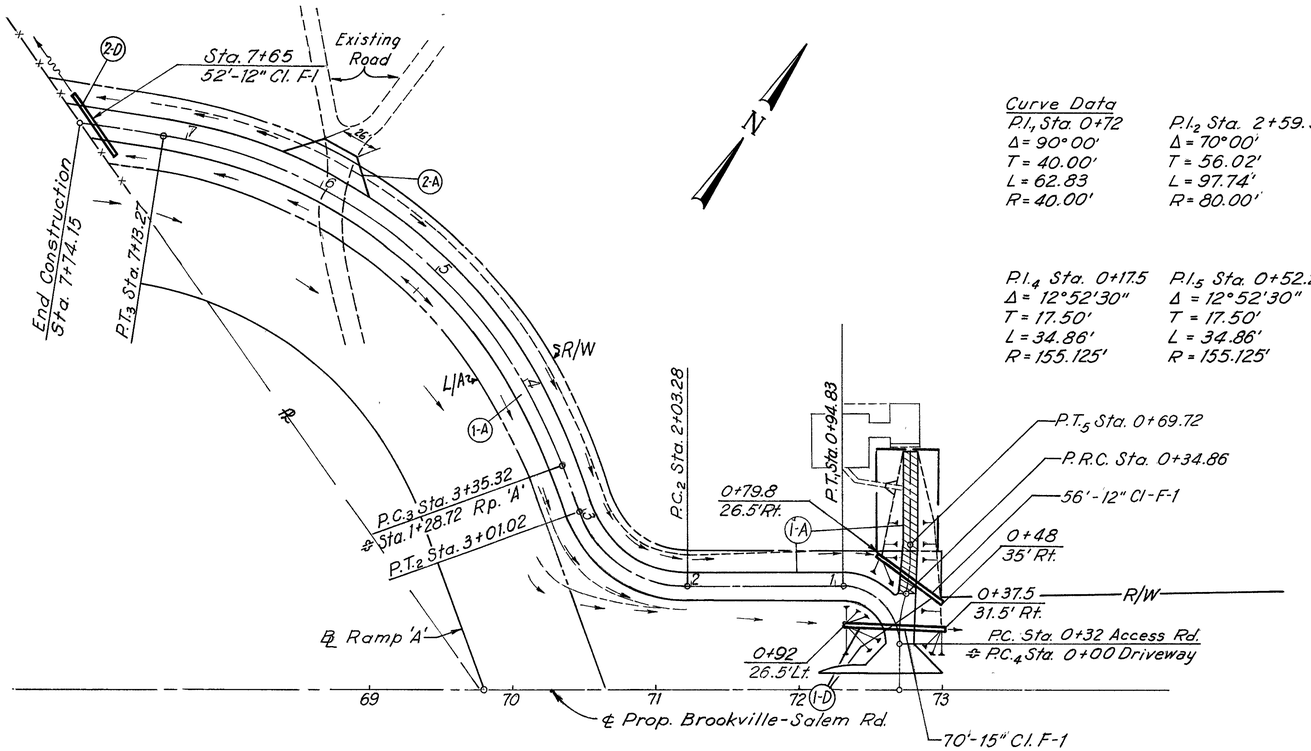
S.R. 49 INTERSECTION DETAILS

I-70-1(15)20
MONTGOMERY COUNTY
MOT. 40-2.73

TYPICAL SECTION

Scale : 1"=10'



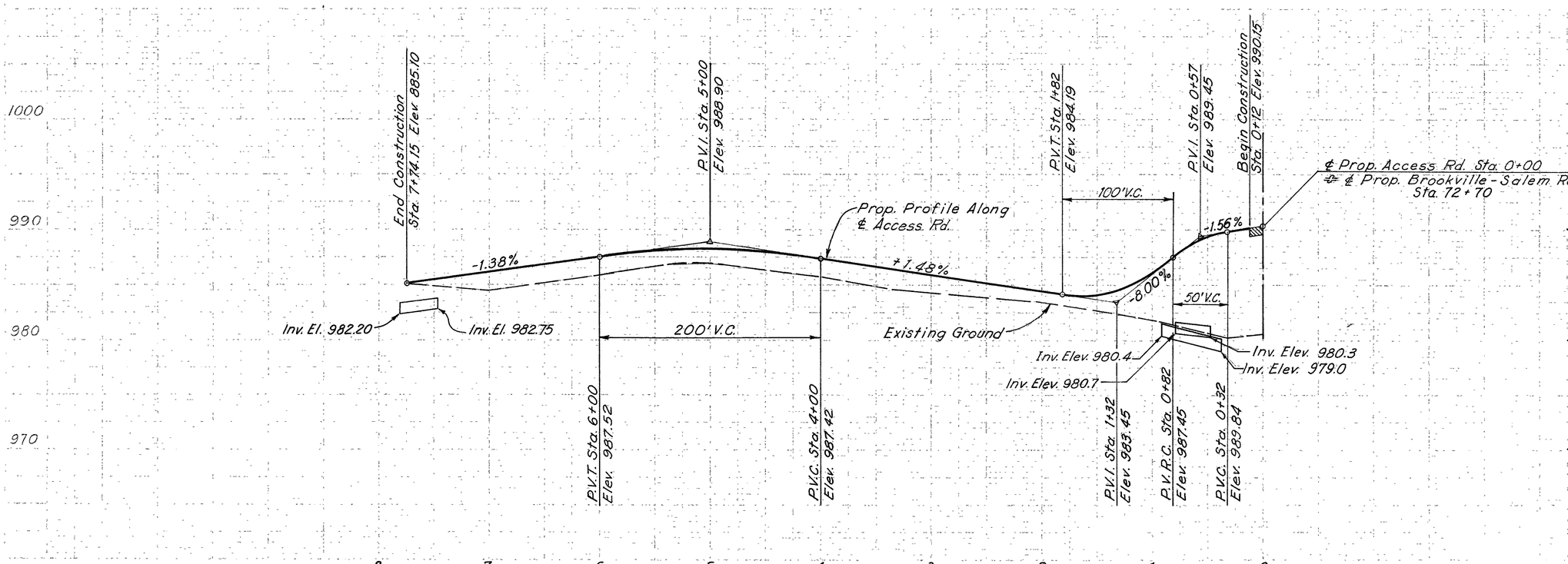


Curve Data

P.I.1 Sta. 0+72	P.I.2 Sta. 2+59.30	P.I.3 Sta. 5+44.43
Δ = 90°00'	Δ = 70°00'	Δ = 61°00'
T = 40.00'	T = 56.02'	T = 209.11
L = 62.83	L = 97.74'	L = 377.95'
R = 40.00'	R = 80.00'	R = 355.00'

P.I.4 Sta. 0+17.5	P.I.5 Sta. 0+52.22
Δ = 12°52'30"	Δ = 12°52'30"
T = 17.50'	T = 17.50'
L = 34.86'	L = 34.86'
R = 155.125'	R = 155.125'

Excavation 121 C.Y.
Embankment 1406 C.Y.
Embankment +12% 1575 C.Y.



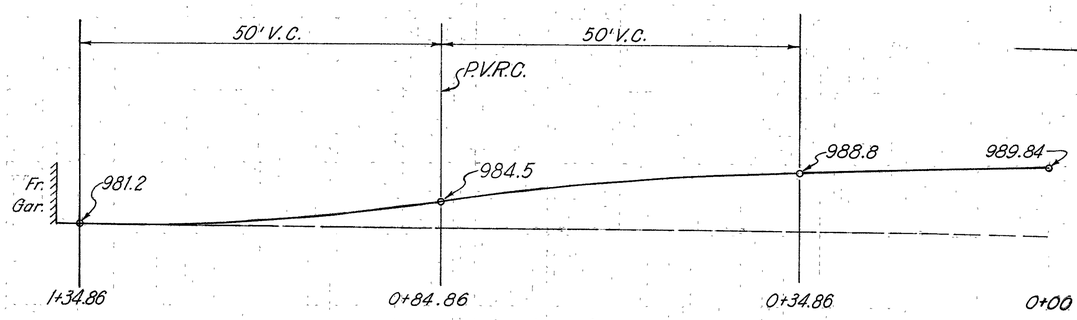
REF. NO.	STATION TO STATION	SIDE	I-1 Class F-1 Asphaltic Concrete Surface Course 12" 15" Type C (PG-64S) LF. LF.	T-35 Asphaltic Concrete Surface Course Type C (PG-64S) C.Y.	B-19 Aggregate Base Course 5" C.Y.	B-19 Aggregate Base Course 8" C.Y.	Drawing Reference Sheet No.
1-D	0+32	L&R	56	TO			
2-D	7+65			52			
1-A	0+12 - 7+66.15					*305.9	
				*91.4		105.9	
2-A	6+00	R		57	14.2	*305.9	
			108	70 *91.4	14.2	105.9	

*State Participation
ESTIMATED QUANTITIES
* 100% State Participation

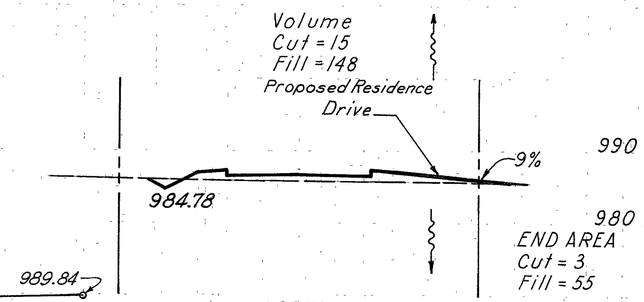
Prop. Brookville-Salem Access Rd. Sta. 0+00 to Sta. 7+74.15

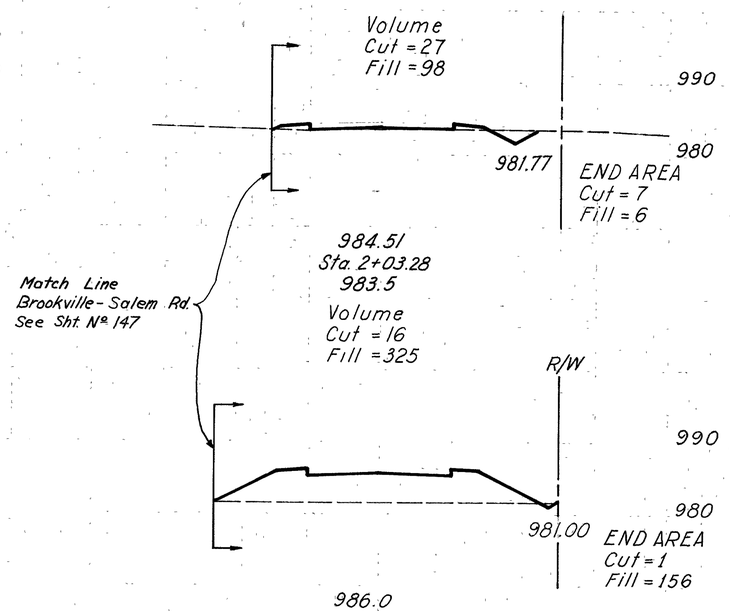
I-70-1(15)20

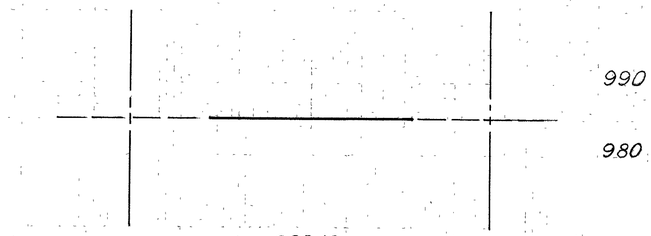
MONTGOMERY COUNTY
MOT. 40-2.73



Private Drive Profile
0+00 ⇔ 0+32 Access Road







FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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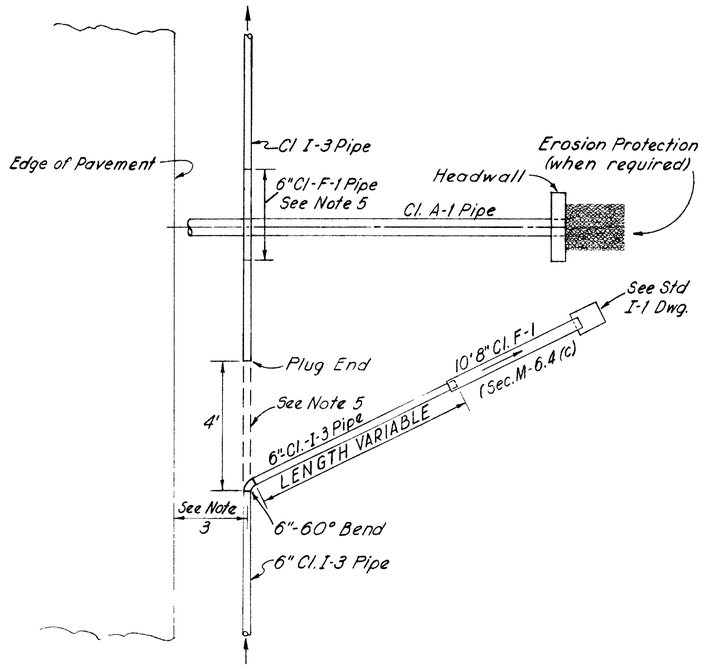
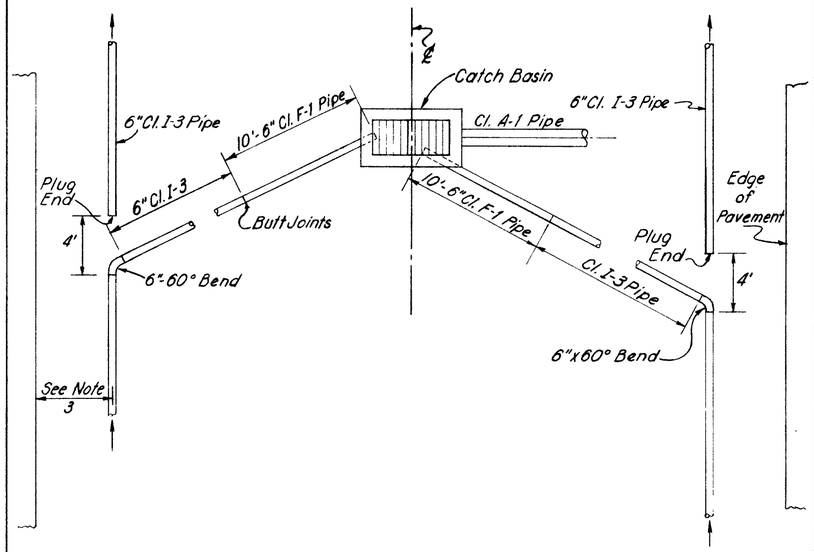
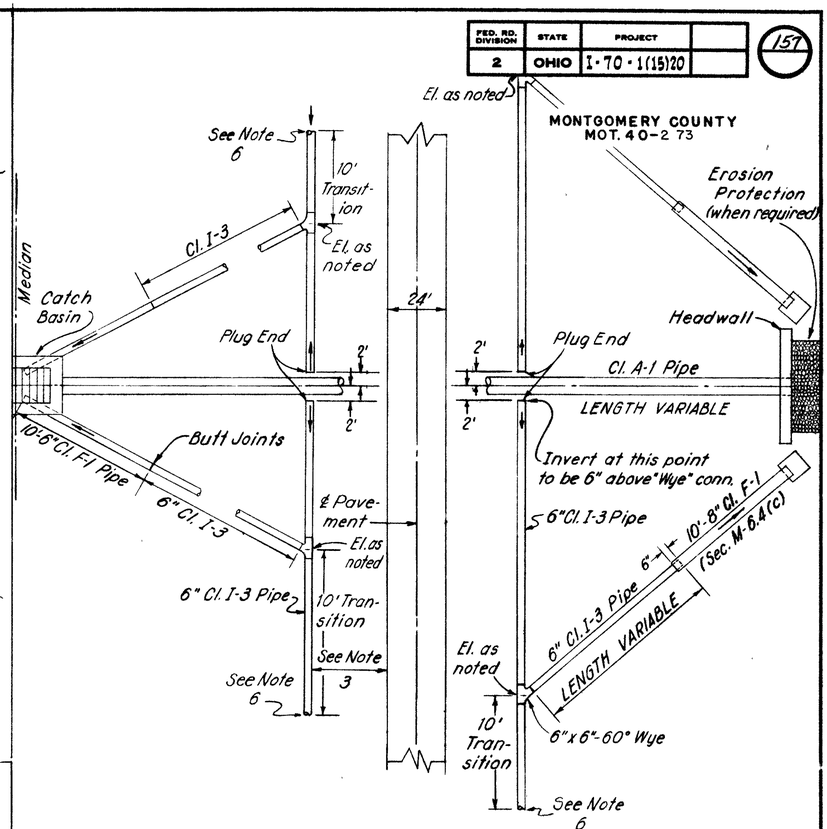
TYPICAL DETAILS OF UNDERDRAIN OUTLETS



DETAIL "A"



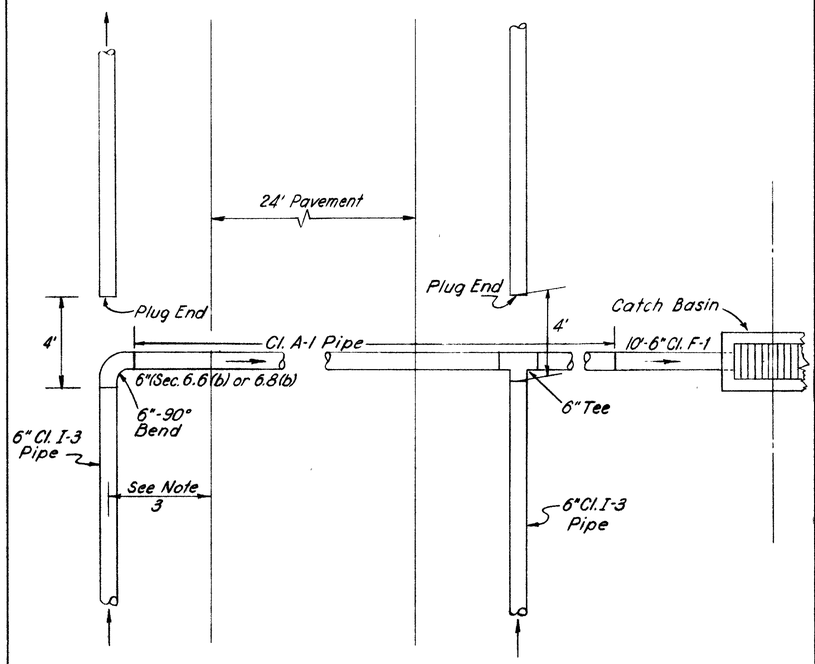
DETAIL "B"



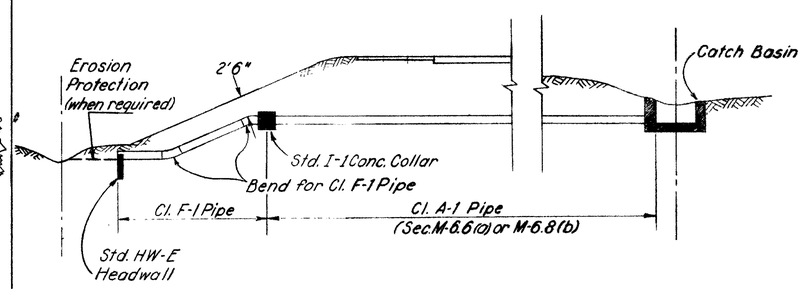
DETAIL "C"

NOTES

1. Details shall be modified as Median width and shape require.
2. Where 8" Cl. F-1 Pipe (Sec. M-6.4 (c)) is shown, it shall be furnished with one reinforced end.
3. The distance of underdrain lies from edge of Pavement shall be taken from the approved Typical Section.
4. Not used.
5. When the underdrain crosses a transverse line, such as in Detail "A," a 10' length of Class F-1 Pipe shall be used to span the trench unless such a crossing is above the area of granular backfill.
6. In Detail "C" Inverts 10' from Wye can be derived from proposed underdrain profiles as shown on Plan & Profile sheets.



DETAIL "D"



MEDIAN OUTLET DETAIL IN HIGH FILL

DETAILS OF UNDERDRAIN OUTLETS

TYPE B HEADWALLS

MONTGOMERY COUNTY
MOT. 40-2.73

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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HEADWALL DIMENSIONS

STATION	ANGLE θ	PIPE SIZE	TYPE	H	W	A	B	C	D	E
292+36	43°15"	66"x106"	B-1	7'-4"	5'-6"	2'-0"	17'-4"	15'-9½"	6'-3"	3'-1½"
292+36	43°15"	66"x106" & 36"	B-3	7'-4"	5'-6"	2'-0"	18'-10½"	15'-9½"	6'-3"	3'-1½"
316+32	40°	60"	B-1	6'-9"	5'-6"	2'-0"	15'-1"	13'-4"	7'-9½"	2'-2¾"

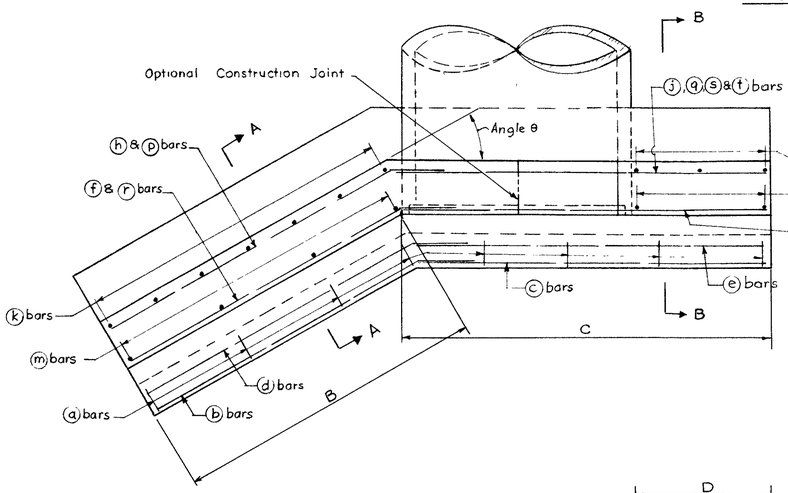
REINFORCING STEEL LIST

	a bars		b bars		c bars		d bars		e bars		f bars		g bars		h bars		j bars		k bars		l bars		m bars		n bars		p bars		q bars		r bars		s bars		t bars			u bars			v bars		ESTIMATED QUANTITIES	
STATION	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	No	Length	Dim.T	No	Length	Dim.U	No	Length		REINF. STEEL Lbs	CONCRETE Cu. Yds.
292+36	12	4-2	3	18-1	3	14-9	2	18-5	2	15-0	3	18-11	1	15-7	3	19-5	1	15-7	13	11-11	5	11-6,10-9,10-0,9-3,8-6	6	9-5	3	9-2,7-9,6-4	4	17-7	6	6-0	4	17-2	2	3-11	2	16-10	9-10	2	16-4	9-4				1030	24.9
292+36	12	4-2	3	19-8	3	14-9	2	20-0	2	15-0	3	20-6	1	15-7	3	21-0	1	15-7	12	11-11	5	11-6,10-9,10-0,9-3,8-6	7	9-5	3	9-2,7-9,6-4	2	19-2	6	6-0	2	18-8	2	3-11	2	16-10	9-10	2	16-4	9-4	2	12-9		1000	25.4
316+32	10	4-2	3	15-11	3	12-5	2	16-4	2	12-10	3	16-8	1	13-2	3	17-2	1	13-8	11	11-6	6	11-5,11-0,10-7,10-2,9-9,9-2	6	9-0	4	11-5,10-9,10-0,9-4	4	15-6	4	7-6	4	14-11	4	6-0	2	13-11	5-11	2	13-5	5-5				950	21.5

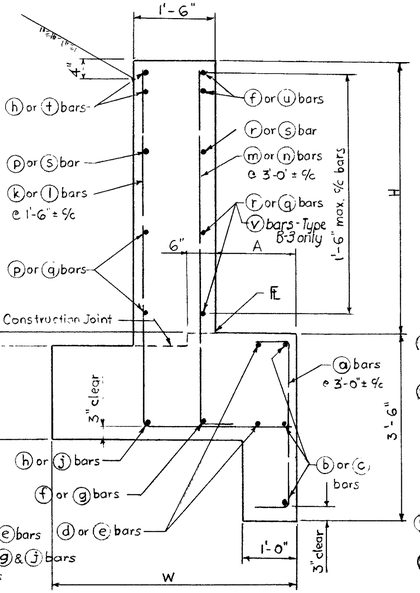
NOTE. All reinforcing steel shall be # 5 bars except (k) and (l) bars for Type B-1 & B-3 headwalls shall be # 6 bars for "H" of 5'-9" thru 7'-6" ; # 7 bars for "H" of 7'-7" thru 8'-6" and # 8 bars for "H" of 8'-7" thru 9'-9". Lengths given in the steel list are in feet and inches

Quantities shown on this sheet are for one headwall

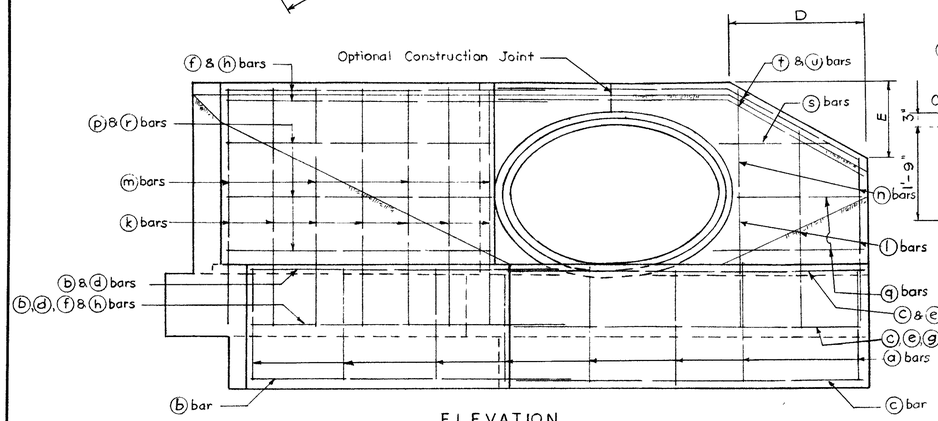
All other notes and details not shown on this sheet shall conform to standard headwalls A and C.



ELEVATION
TYPE B-1 HEADWALL

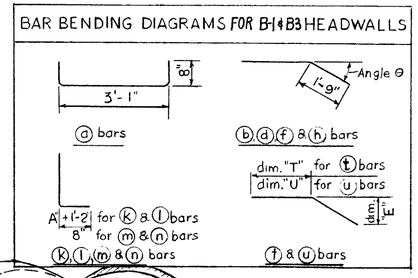


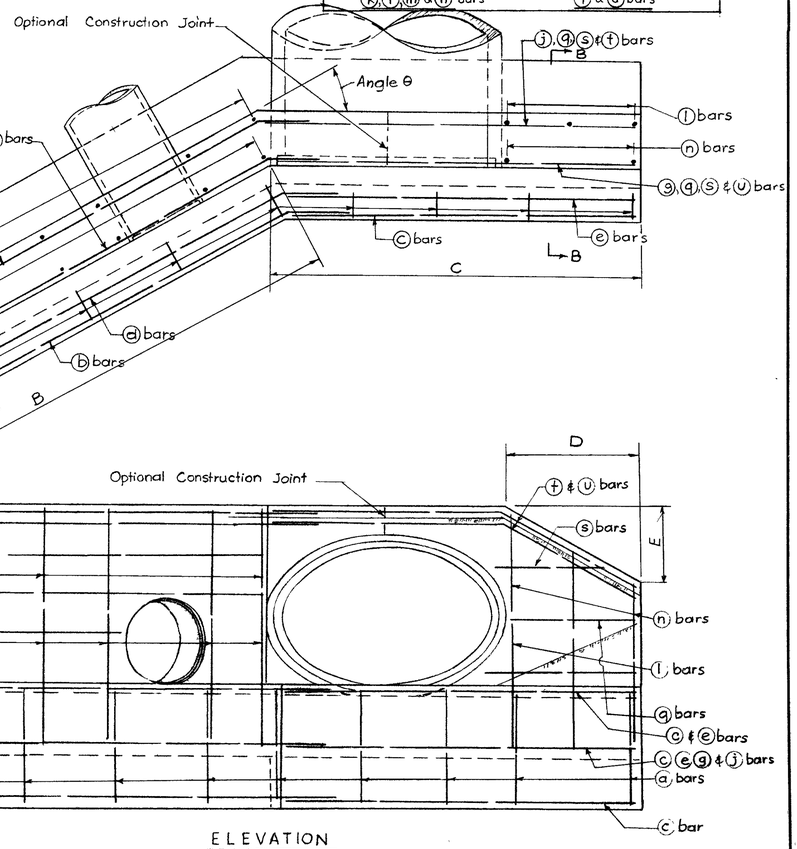
SECTION A-A & B-B



ELEVATION
TYPE B-1 HEADWALL

BAR BENDING DIAGRAMS FOR B-1 & B-3 HEADWALLS





ELEVATION
TYPE B-3 HEADWALL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(13)20	

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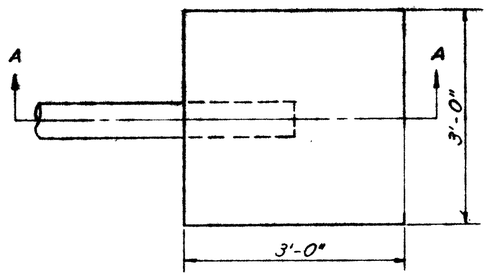
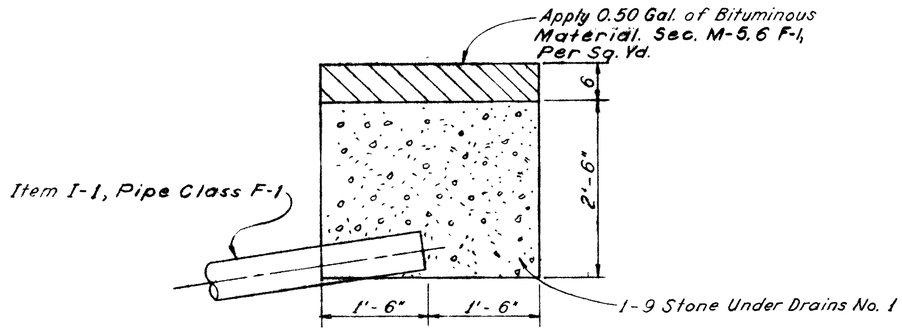
MONTGOMERY COUNTY
MOT. 40-2.73

SPRING DRAIN



PLAN

Scale: 1"=1'-0"



SECTION A-A

Scale: 1"=1'-0"

Note: No 34 Aggregate shall be used with a 6" layer of No 6 Aggregate over the top and sealed with Bituminous Material.

Aggregates, Bituminous Material and necessary Excavation For Spring Drains shall be paid for at the Unit Price Bid Per Lin. Ft. of "Item I-9, Stone Underdrains, No.1," as per plan. Spring Drains are to be placed at locations designated by The Engineer

Estimated quantities of I-9, Stone Underains, No. 1, and of 6" I-1 Pipe, Class F-1 are carried in the General Notes (Sheet No.9) for draining springs. This Item shall be non-performed in the event that none are encountered.

A Spring Drain Constitutes 3 Lin.Ft.

SPECIAL BERM & SLOPE PROTECTION

PRIOR TO PLACEMENT OF SOD IN THE BERM AND SLOPE, GALVANIZED POULTRY FENCE SHALL BE PLACED ON THE FINISHED GRADE IN STRANDS WHICH SHALL BE AT RIGHT ANGLES TO THE DIRECTION OF FLOW. EACH STRAND SHALL BE STAKED SECURELY ON TOP AND BOTTOM WITH STAKES PLACED AT FOUR FOOT INTERVALS.

STAKES SHALL BE OF WOOD 1"x1"x8" AND SHALL BE PERPENDICULAR TO THE GROUND AND FLUSH WITH THE TOP OF THE SOD.

THE FENCE SHALL BE STRAIGHT LINE POULTRY FENCE OR EQUIVALENT WITH STRAND WIDTH OF FOUR FEET, HAVING A TWO INCH MESH AND ALL WIRES NO 20 GAUGE

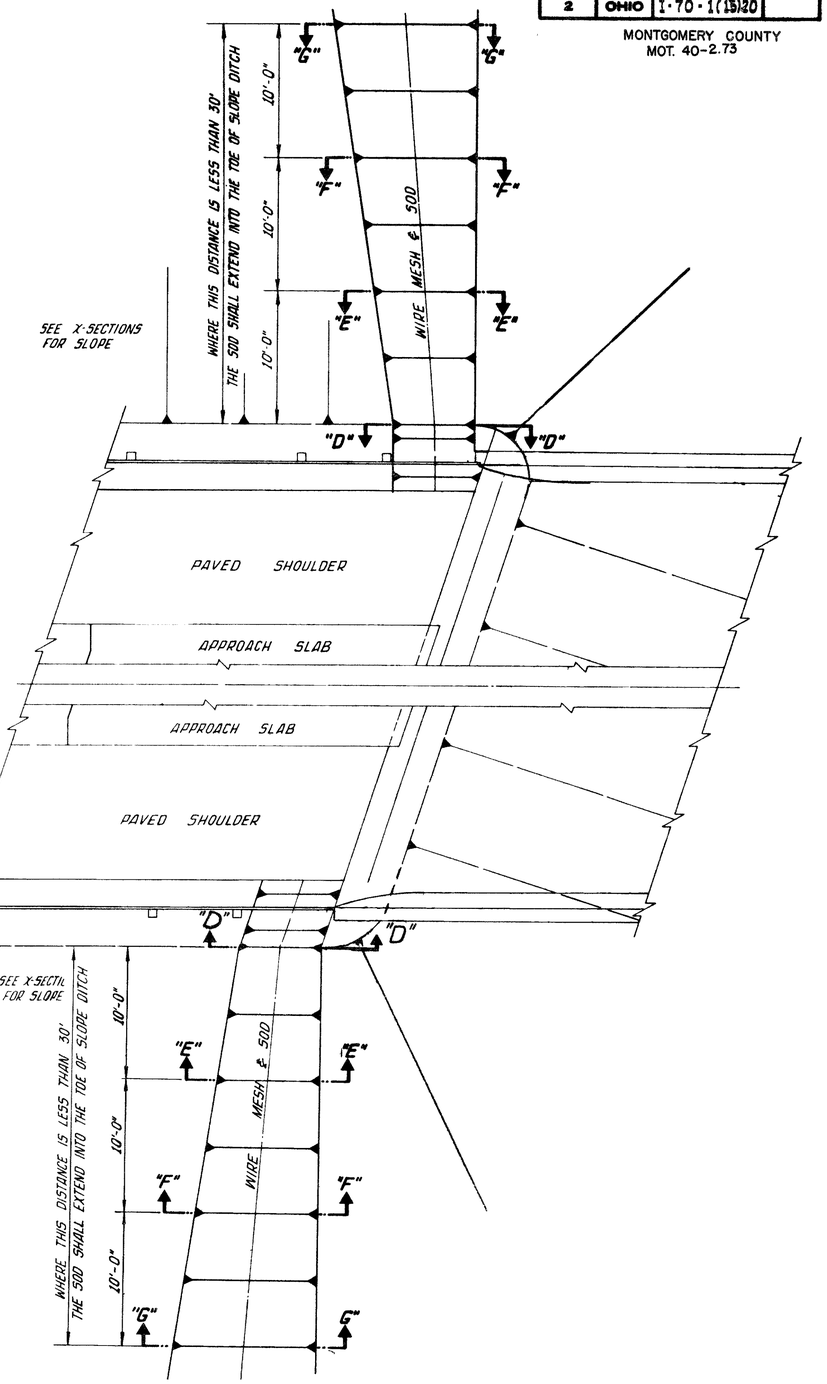
THE STRANDS OF FENCING SHALL BE FASTENED TOGETHER AT TWELVE INCH INTERVALS BY MEANS OF HOG RINGS.

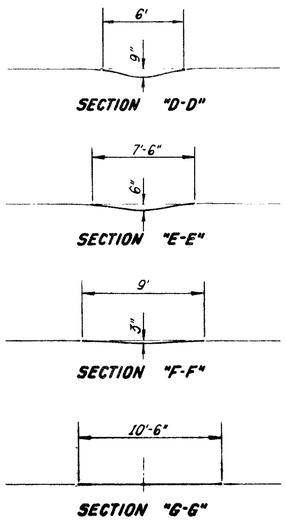
THE FENCE SHALL BE SECURED TO THE WOOD STAKES BY METAL STAPLES

SOD SHALL BE LAID IN ACCORDANCE WITH CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION L-10.07

THIS ITEM IS REQUIRED ONLY WHERE RATE OF SIDE SLOPE IS STEEPER THAN 6:1

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM L-10 SODDING FOR SPECIAL BERM AND SLOPE PROTECTION.





SPRING DRAIN & SLOPE PROTECTION DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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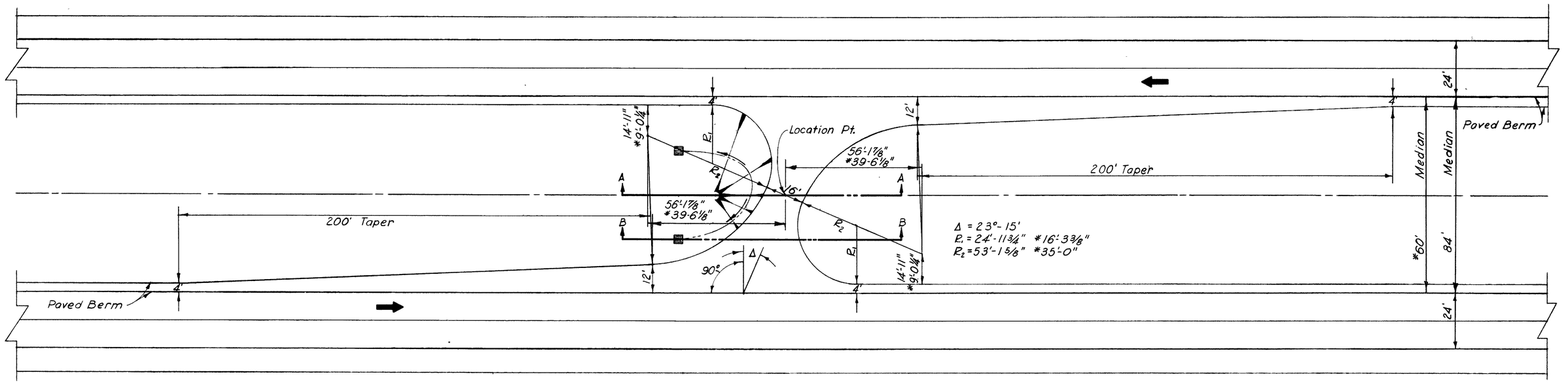
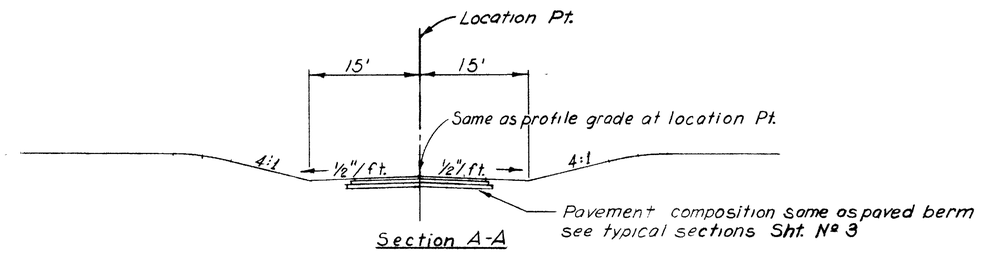
MONTGOMERY COUNTY
MOT. 40-2.73

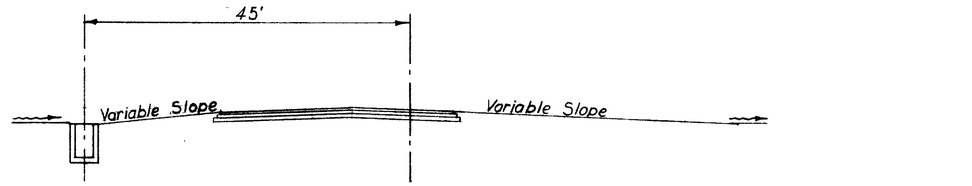


Note: Drawing is applicable for an 84' Median
*Dimensions apply to 60' Median

Scale:(84' Median) 1"=20'



Section A-A



Section B-B

Scale 1"=10'

TYPICAL MEDIAN CROSSOVER

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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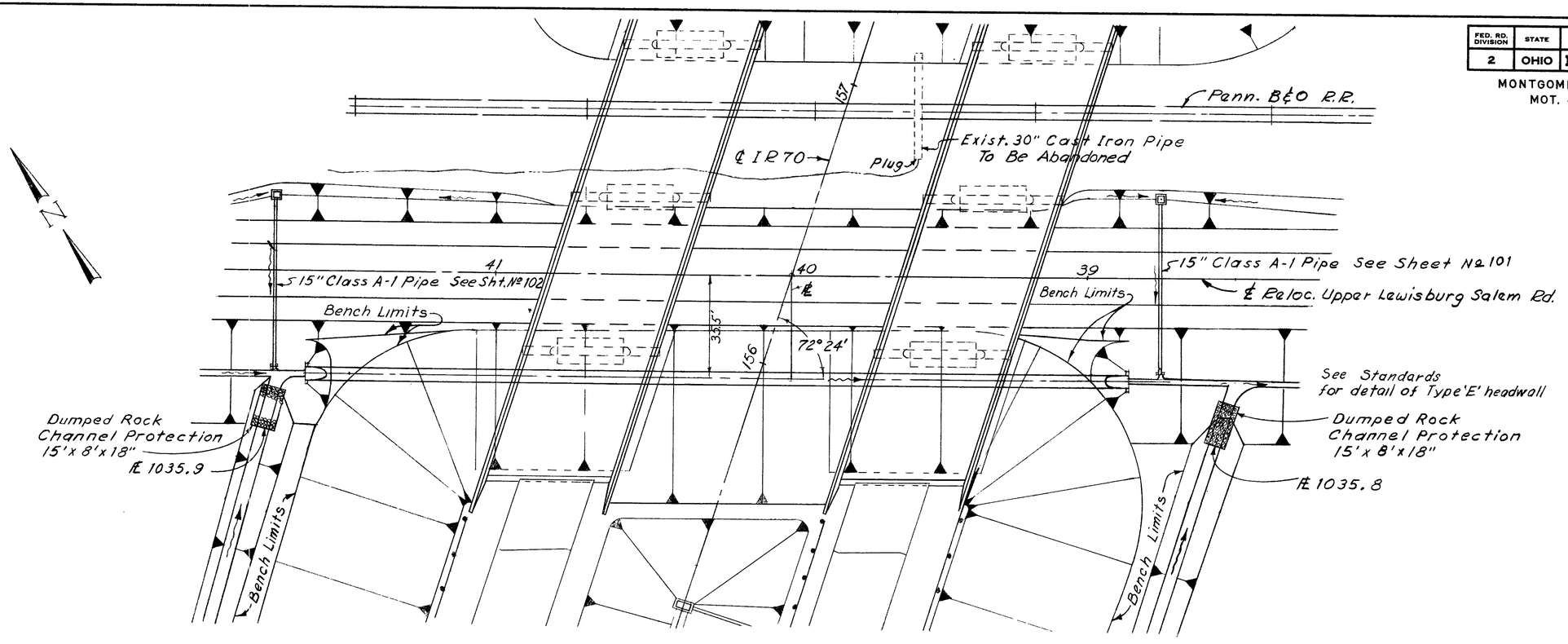
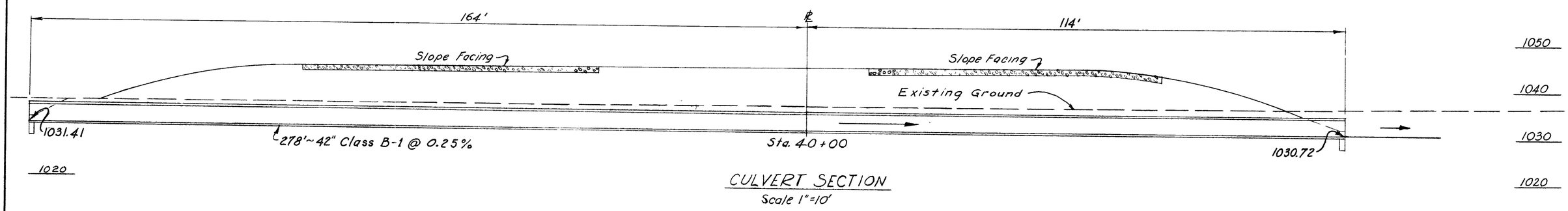
MONTGOMERY COUNTY
MOT. 40-2.73



PLAN
Scale 1" = 20'

AREA = 55 Acres
Q_{50} = 66 c.f.s.



CULVERT SECTION
Scale 1" = 10'

ESTIMATED QUANTITIES

I-1 42" Pipe Culvert, Class "B-1", 278 Lin. Ft.
I-2 Masonry, Std. Type "E" Hdwl. 1.52 Cu. Yds.
I-10 Dumped Rock, 18" Thick 13.3 Cu. Yds.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
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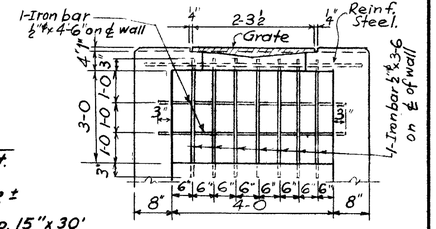
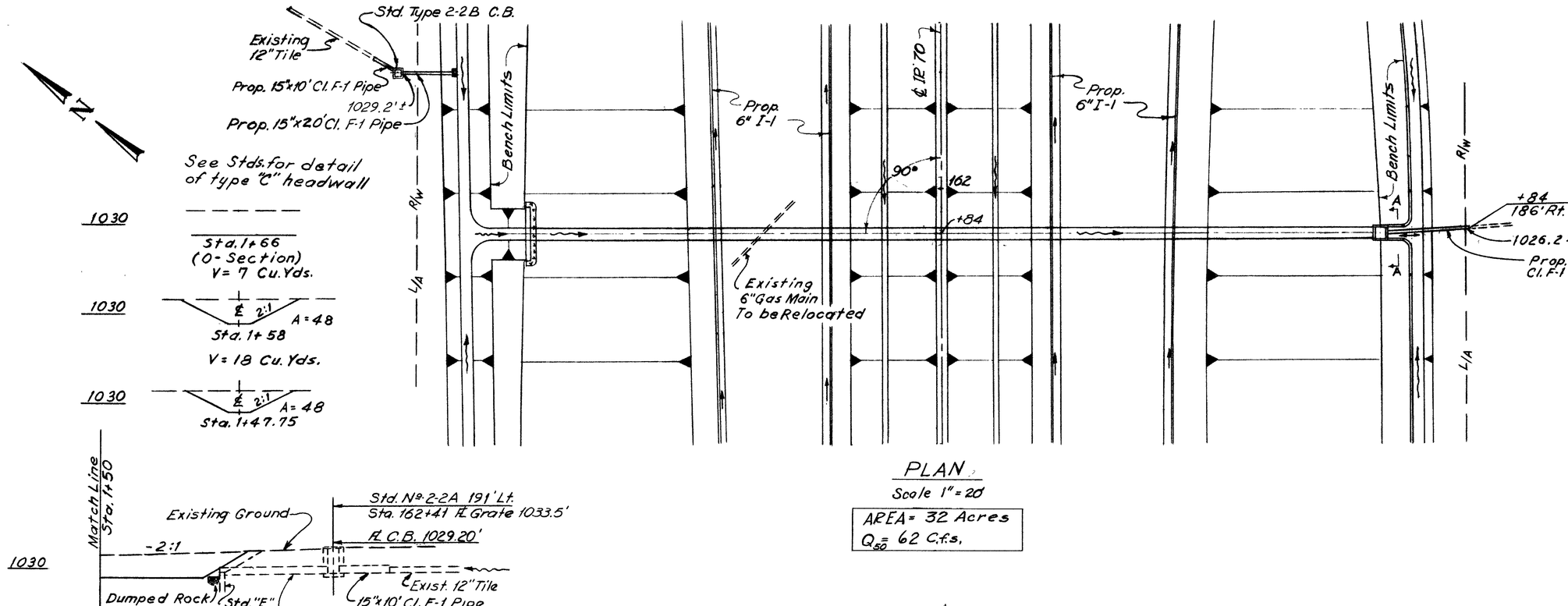
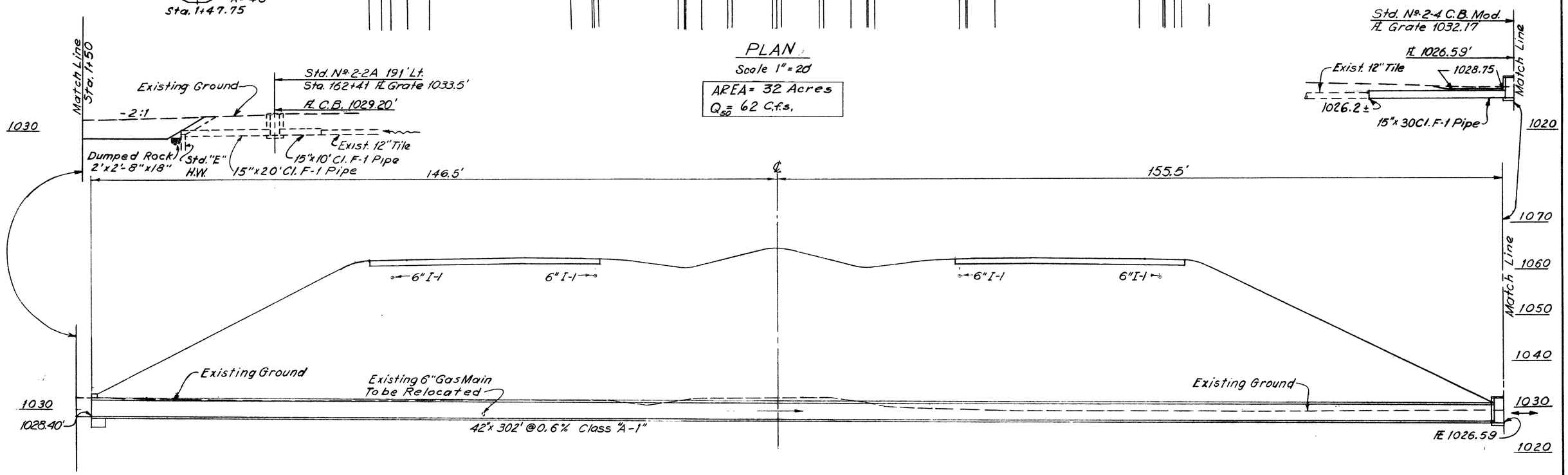


VIEW A-A
Showing Side Inlet



PLAN
Scale 1"=20

AREA = 32 Acres
Q_{50} = 62 C.f.s.



CULVERT SECTION
Scale 1"=10'

ESTIMATED QUANTITIES

I-1	42" Pipe Culvert, Cl. A-1, M-6.4 (d) 8 Gage,	302 Lin. Ft.
I-1	15" Pipe, Class F-1	60 Lin. Ft.
I-2	Masonry, Std. Hdwl. Type "C"	11 Cu. Yds.
I-2	Masonry, Std. Hdwl. Type "E"	0.26 Cu. Yds.
I-8	Std. C.B., Type 2-4, Mod.	1 each
I-8	Std. 2-2-B	1 each
I-10	Dumped Rock, 18" Thick	0.3 Cu. Yds.
E-3	Channel Excavation	25 Cu. Yds.
L-10	Sodding	4.2 Sq. Yds.

CULVERT SECTION Sta. 161+84

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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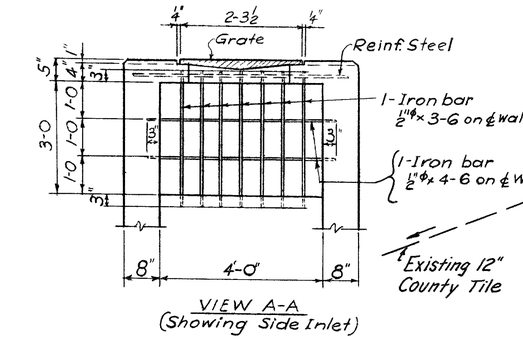
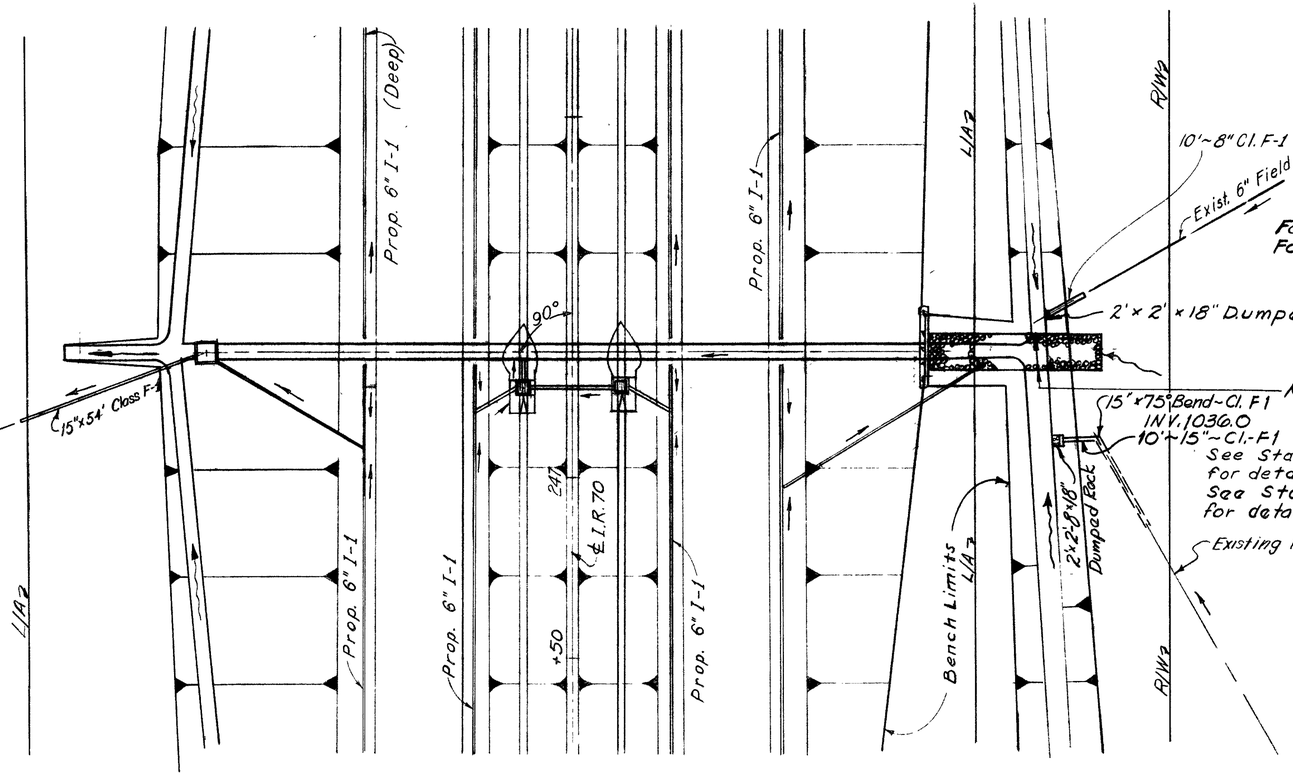
MONTGOMERY COUNTY
MOT. 40-2.73



VIEW A-A
(Showing Side Inlet)

1040

1030 Sta 1+40 V=4
1035 A=6
1030 Sta. 1+03.67



For details of Storm Sewer See sh. no. 71
For details of underdrains See sht. no. 28

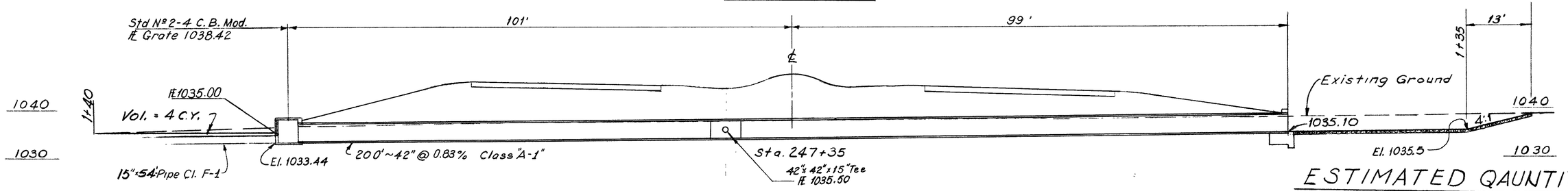
See Standards
for details of type "C" headwalls
See Standards
for details of type 'E' headwalls

Sta 1+25
"O" Section
Vol. = 3 C.Y

1040
2:1 A=29 2:1
Sta 1+19 1030
Vol. = 21 C.Y. 1040
2:1 A=31 2:1
Sta 1+00.25 (Ahead) 1030

PLAN
Scale: 1=20"

AREA = 87 Acres
Q_{50} = 64 c.f.s.



CULVERT SECTION
Scale: 1" = 10'

ESTIMATED QAUNTITIES

I-1	42" Pipe Culvert, Class A-1, Sec. M-6.6(a)	194' L.F.
	15" Pipe, Class F-1	64' Lin. Ft.
	8" Pipe, Class F-1	10 Lin. Ft.
I-2	Masonry, Std. Type "C" Headwall	11 C.Y.
	Masonry, Std. Type "E" Headwall	0.26 C.Y.
I-5	15"x 75° Bend, Class F-1	1 Each
I-8	Std. C.B. Type 2-4, Mod.	1 Each
I-10	6" Riprap	52 sq. yds.
	Dumped Rock	9.5 C.Y.
E-3	Channel Excavation	28 C.Y.
L-10	Sodding	4.2 sq. yds.
I-5	42"x 42"x 15" Tee	1 Each

CULVERT SECTION Sta. 247+35

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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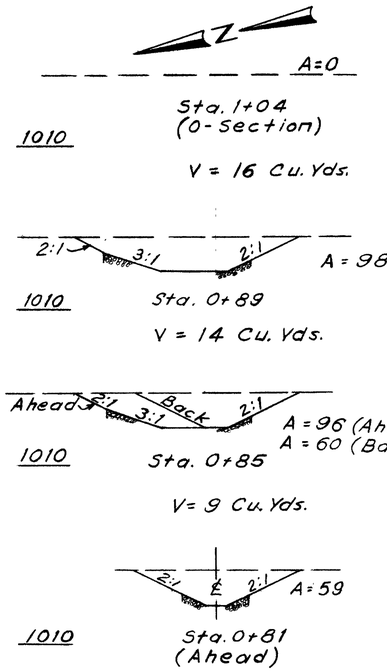
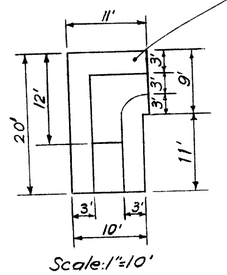
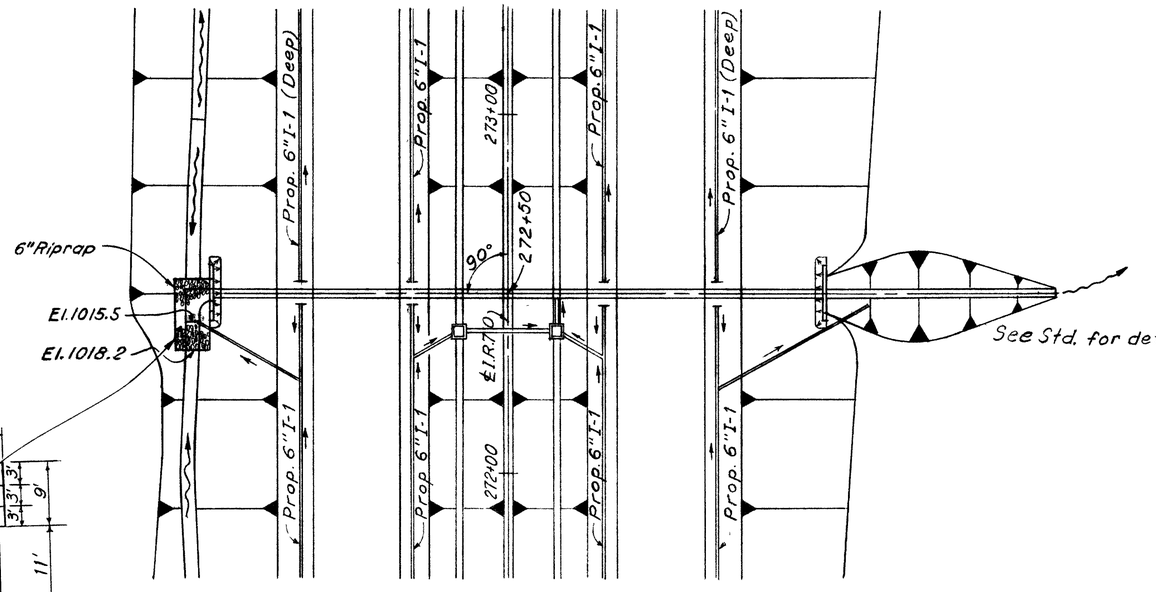
MONTGOMERY COUNTY
MOT. 40-2.73





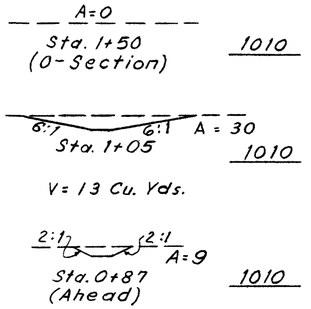


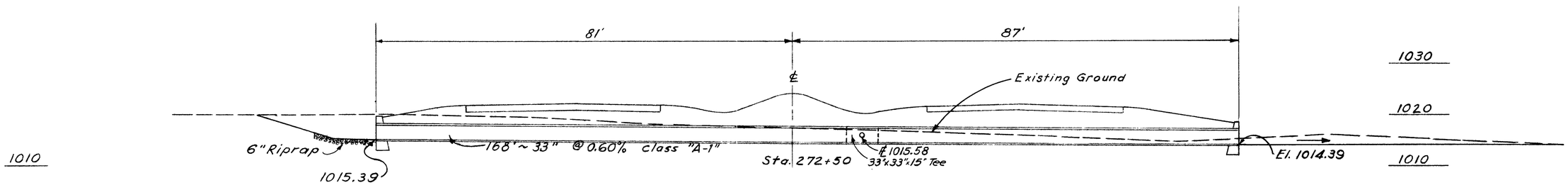
PLAN
Scale: 1"=20'

AREA = 9.3 Acres
Q_{50} = 38 c.f.s.

For Storm Sewer Data See Sheet Nº 76
For Underdrain Data See Sheet Nº 31

See Std. for details of type "A" headwalls





CULVERT SECTION
Scale: 1"=10'

ESTIMATED QUANTITIES

I-1 33" Pipe Culvert Cl. A-1 162 Lin. Ft. Sec. M-6.6(a)
I-2 Masonry Std. Type "A" Headwalls 23.2 C.Y.
I-10 Riprap 6" Thick 23.2 Sq. Yds.
L-10 Sodding 7.0 Sq. Yds.
I-5 Pipe Special, 33"x33"x15" Tee, Cl. A-1, Sec. M-6.6(a), One Each
E-3 Channel Excavation 77 Cu. Yds.

CULVERT SECTION Sta. 272+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
MOT. 40-2.73

+80 (159'Lt) El. 991.1
+72 (167'Lt) El. 988.0±
Dumped Rock Channel Protection 12'x6'x18" (4.0 c.y.)
1/4"/ft.
Dumped Rock Channel Protection 25'x5'x18" (6.9 c.y.)
Meet Existing
Dumped Rock Channel Protection 20'x19'x30" (35.2 C.Y.)
Sodding 6.8 S.Y.
Dumped Rock Channel Protection 30'x5'x18" (12.0 C.Y.)
Dumped Rock Channel Protection 10'x7'x18" (3.9 C.Y.)
El. 987.74
Note: Existing Channel to be backfilled as indicated on the cross sections, and in accordance with Sec. E-3.02
Dumped Rock 7'x6'x18" (2.3 C.Y.)
Dumped Rock 4'x6'x18" (1.3 C.Y.)
For Culvert & Channel Sections See Shts. 166 & 167
For Underdrain Data See Sheet Nº 33
Sodding 3.68 S.Y.
Special Sodding
Sodding 3.85 S.Y.
Riprap 20.2 S.Y.
Special Sodding
Jute Matting 8' Wide
El. 994.5
El. 998.5
El. 997.5
Prop. 6" I-1
Prop. 6" I-1
℄ I.R. 70
Prop. 6" I-1
Prop. 6" I-1
F-1
F-1
F-1
F-1
294
293
292
291
90°
90°
46°-4.5'
Dumped Rock Channel Protection 14'x8'x18" (6.2 c.y.)
End Paved Gutter, Std. Type-3, 172' L.f. With 18" Sod Strip, each side (57.3 s.y.)
Sta. 21+30
El. 996.75
El. 990.75
+85 El. 991.0
+60 El. 993.5
10'
Sodding 3.8 S.Y.
Special Sodding
22
23
24
25
26
27
℄ Wellbaum Rd.
Sta. 21+75 El. 998.0
Sta. 22+12 El. 991.5
Paved Gutter Std. Type 3, 42' L.F. With 18" Sod Strip, each side (14.0 s.y.)
Special Sodding
Sodding 6.55 S.Y.
6" Riprap 25'x4' (11.1 s.y.)
6" Riprap 20'x4' (8.9 S.Y.)

ESTIMATED QUANTITIES

I-1	106"x 68" Elliptical Pipe Culvert, Class G-1 Sec. M-6.7 (b)	264 Lin. Ft.
I-1	36" Pipe Culvert, Class A-1 Sec. M-6.6 (b) or M-6.8 (b)	190 Lin. Ft.
I-1	36" Pipe Culvert, Class A-1 Sec. M-6.6 (d)	128 Lin. Ft.
I-2	Masonry, Std. Type C Hdwls. (Three)	27 C.Y.
I-2	Masonry, Type "B" Hdwls. (See Sheet #158)	50.3 C.Y.
I-10	Riprap, 6" Thick	39.1 S.Y.
I-10	Dumped Rock, 30" Thick	35.2 C.Y.
I-10	Dumped Rock, 18" Thick	36.6 C.Y.
E-3	Channel Excavation (See Sheet #167)	1,364 C.Y.
L-10	Sodding	96 S.Y.
I-14	Paved Gutter, Std. Type 3	214 Lin.Ft.

Begin Work
Meet Existing

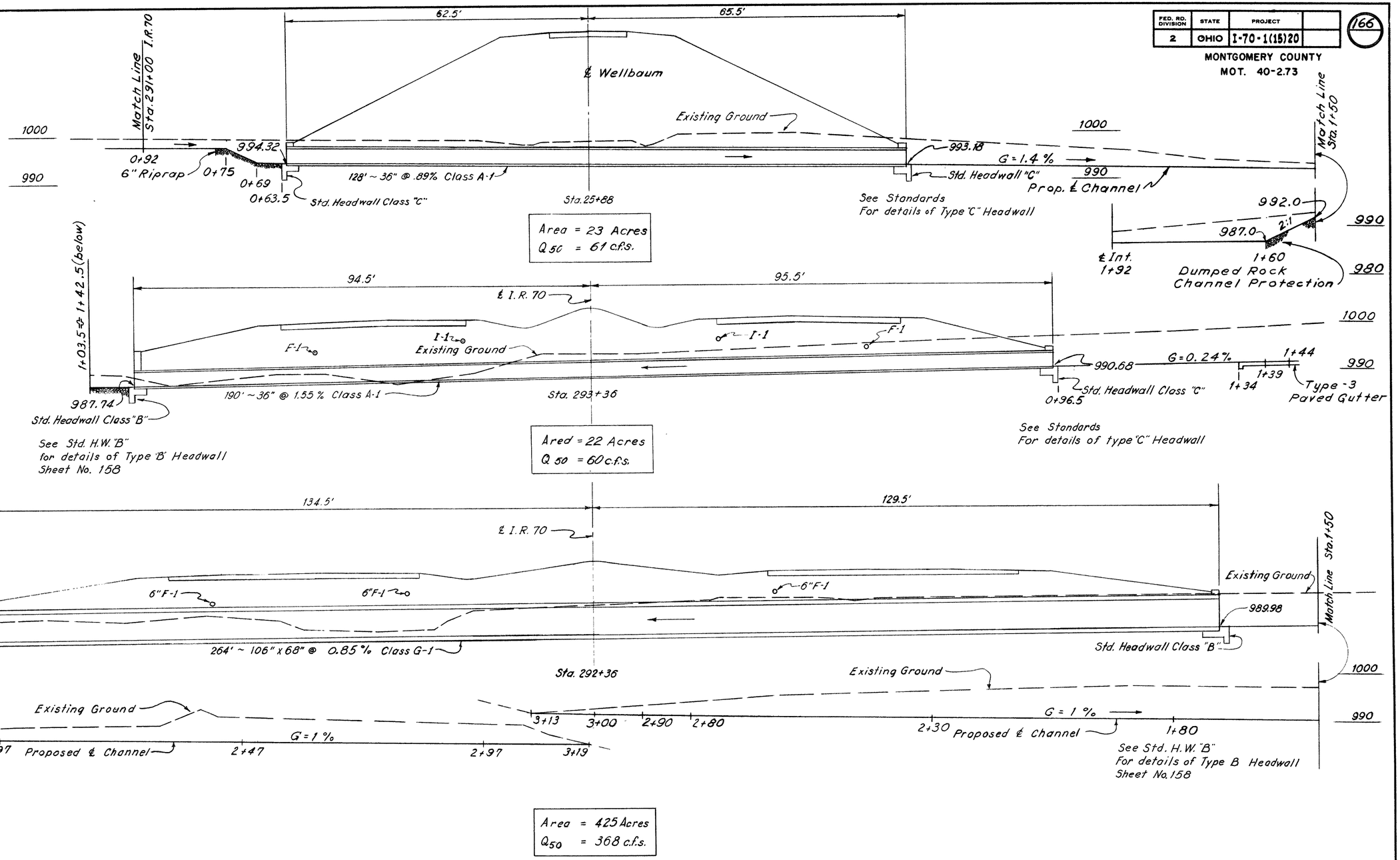
WELLBAUM Rd. STA. 25+88
I.R. 70 ℄ STA. 293+36

CULVERT PLAN — I.R. 70 & STA. 293+36

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

166

MONTGOMERY COUNTY
MOT. 40-2.73

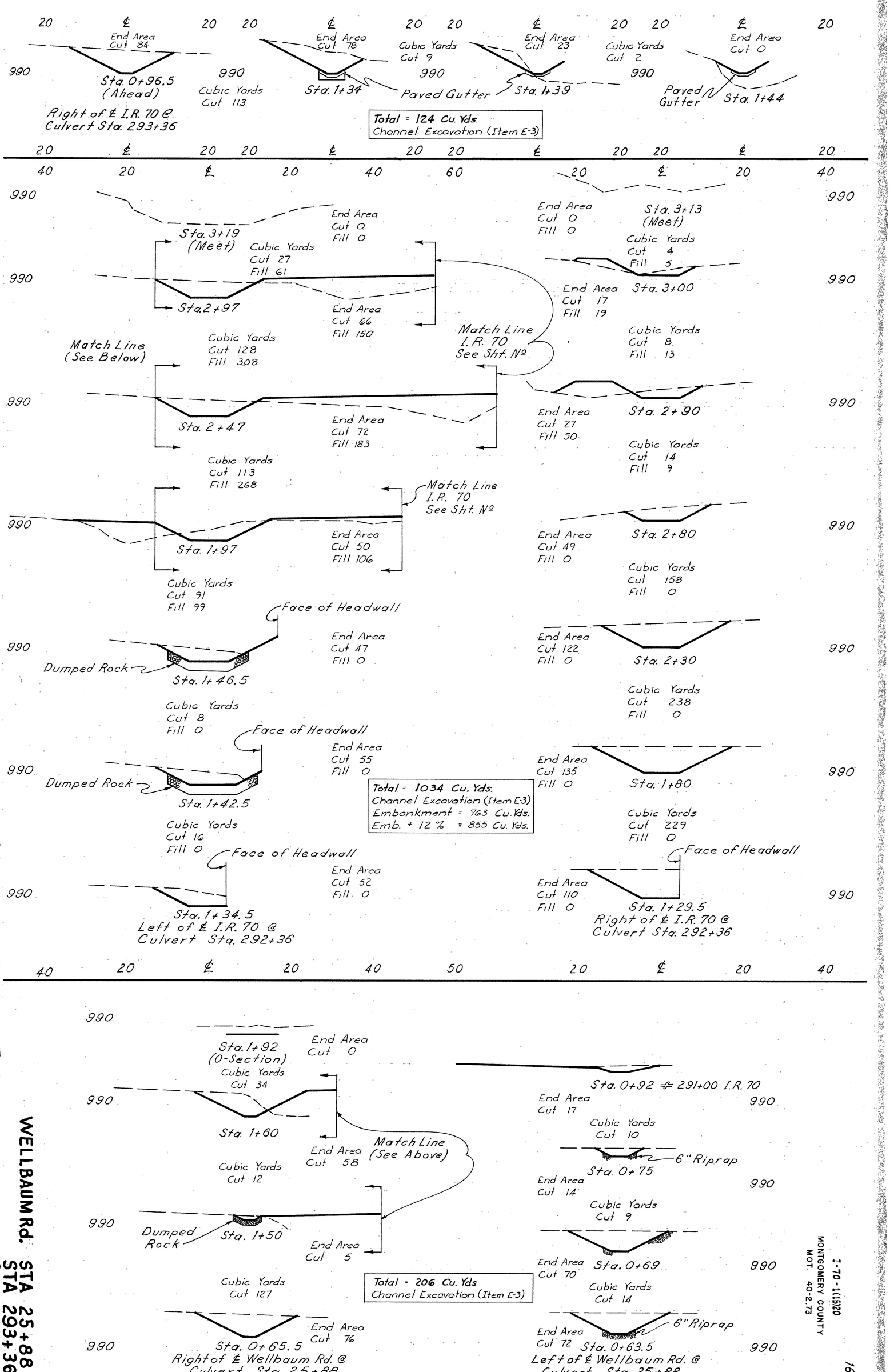


CULVERT SECTIONS

Scale: 1" = 10'

WELLBAUM Rd. STA. 25+88
STA. 293+36

CULVERT SECTION STA. 292+36



WELLBAUM Rd. STA 25+88
STA 293+36

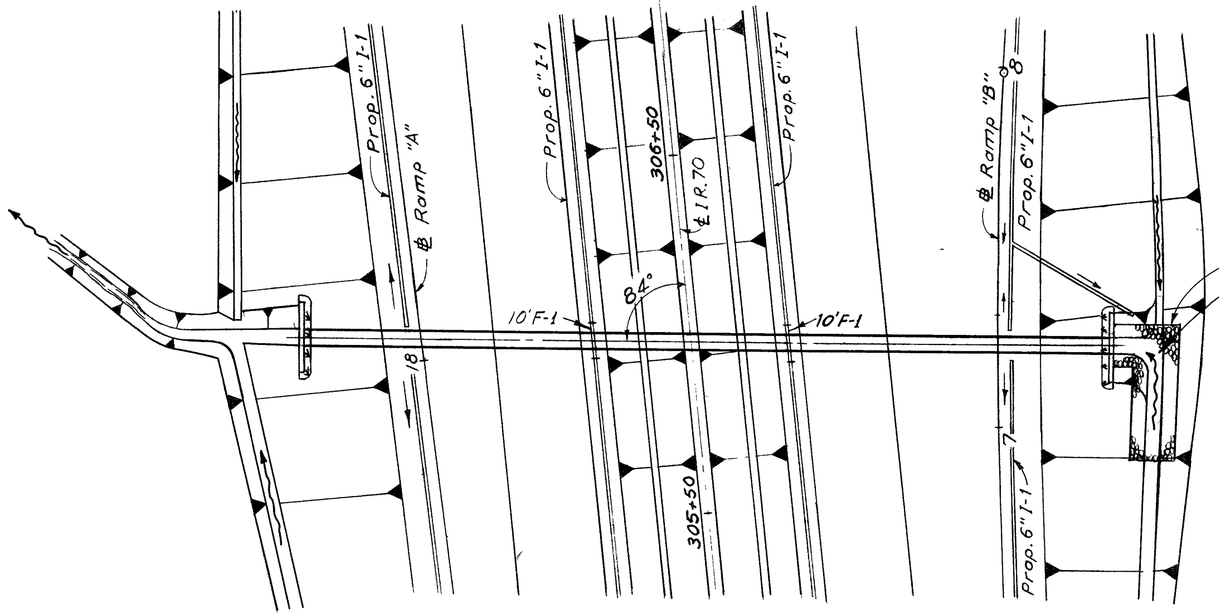
CROSS SECTIONS OF CULVERT 2

I-70-1(115)20
MONTGOMERY COUNTY
MOT. 40-2.73

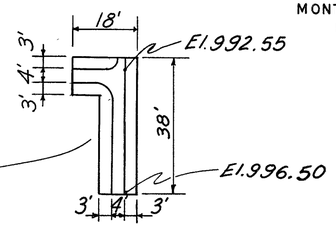
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

168

MONTGOMERY COUNTY
MOT. 40-2.73



PLAN
Scale: 1" = 20'



6" Riprap

See Standards
for detail of type "C" Headwall

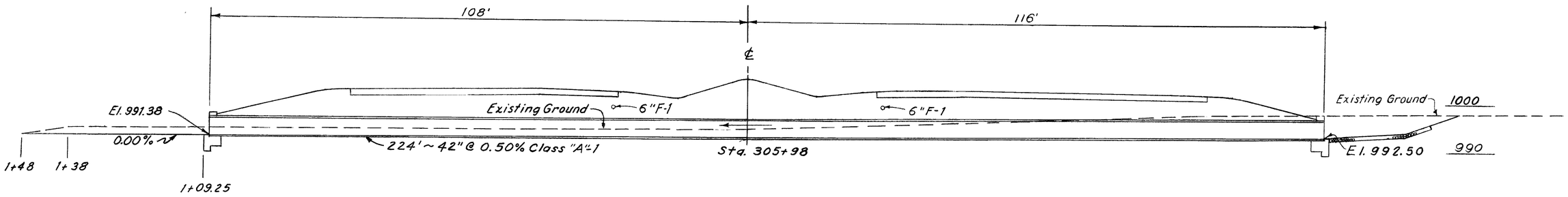
For Underdrain Data See Sheet No 34

990 — Sta. 1+48 (O-Section) — V = 2

990 — A = 9 — Sta. 1+38 — V = 12

990 — A = 14 — Sta. 1+09.25

AREA = 35 Acres
Q_{50} = 72 c.f.s.



CULVERT SECTION
Scale: 1" = 10'

ESTIMATED QUANTITIES

I-1-42" Pipe Culvert, Class "A-1", 224 L.F.
Sec. M-6.6(a)
I-2-Masonry, Std. Type "C" Hdwl. 22 cu. yds.
I-10- 6" Riprap 54.0 sq. yds.
E-3 Channel Excavation 14 cu. yds.
L-10- Sodding 8.5 sq. yds.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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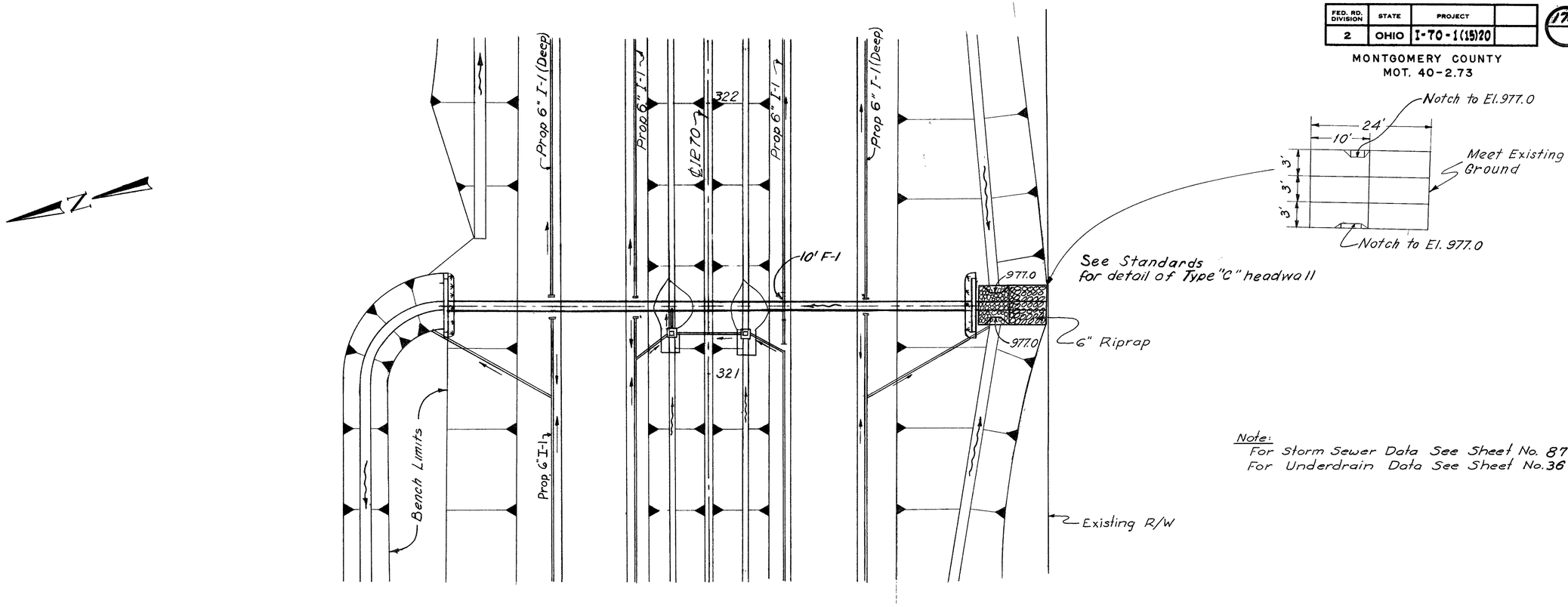
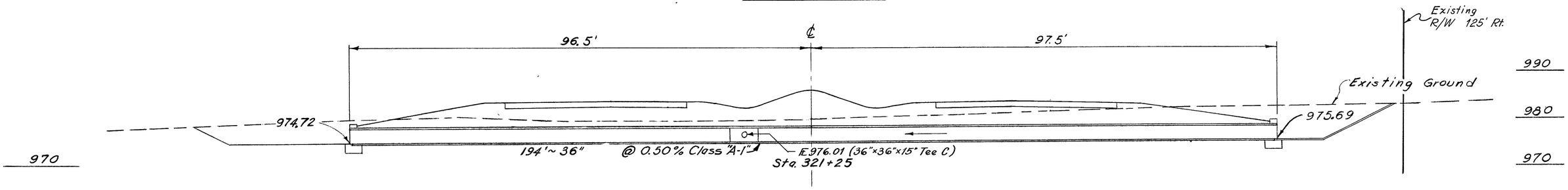
MONTGOMERY COUNTY
MOT. 40-2.73



PLAN
Scale: 1" = 20'

AREA = 15 Acres
Q_{50} = 47 c.f.s.



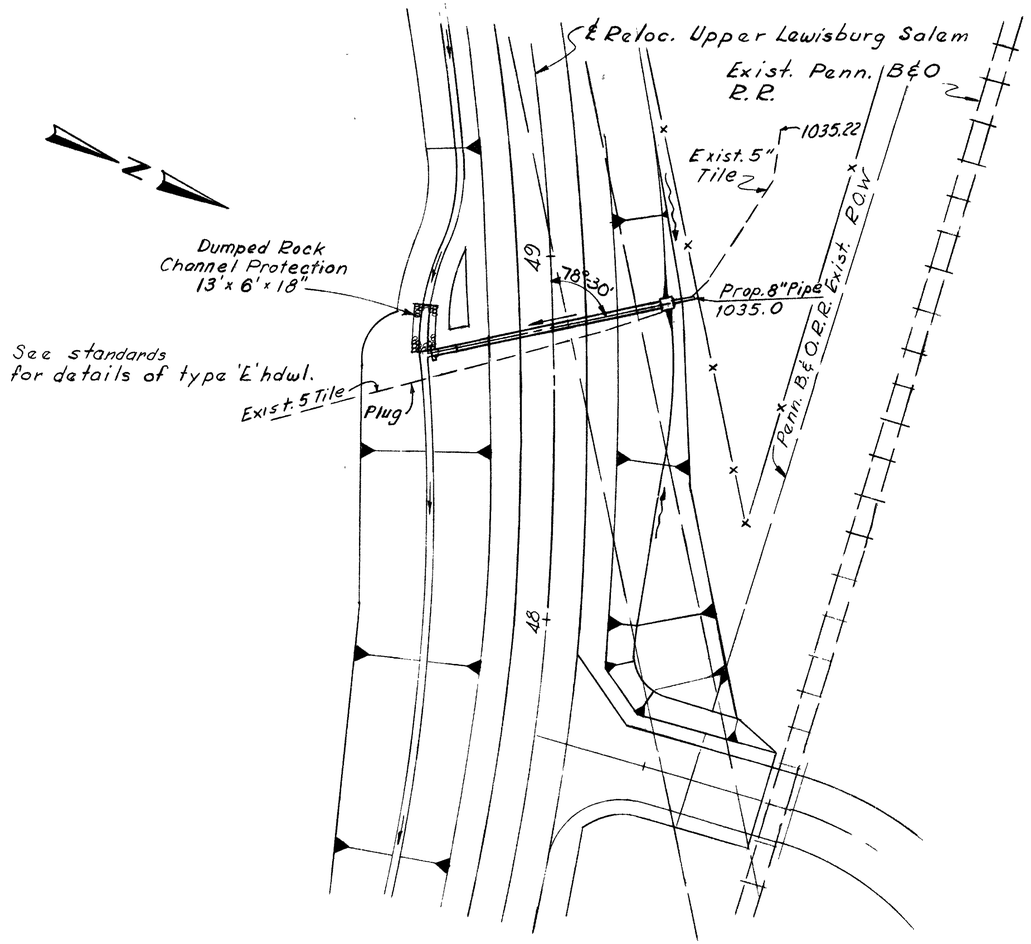
CULVERT SECTIONS
Scale: 1" = 10'

Note:
For Storm Sewer Data See Sheet No. 87
For Underdrain Data See Sheet No. 36

ESTIMATED QUANTITIES

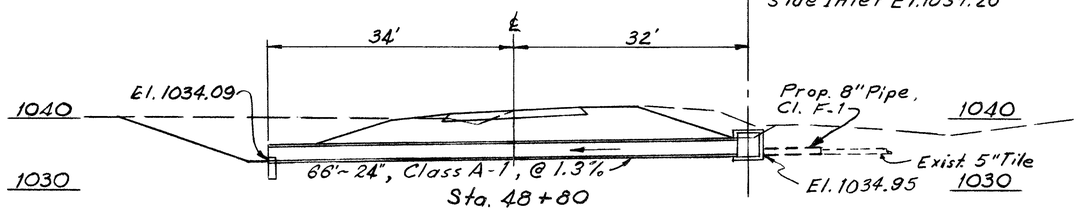
I-1	36" Pipe Culvert, Cl. A-1, Sec. M-6.6(a) or Sec. 6.8(b), 188 L.f.	
I-2	Masonry, Std. Type "C" Headwalls,	16.0 c.y.
I-5	Pipe Special 36"x36"x15" Tee	one each
I-10	6" Riprap	27.1 s.y.
L-10	Sodding	7.2 s.y.

CULVERT SECTION Sta. 321+25



PLAN
Scale 1"=20'

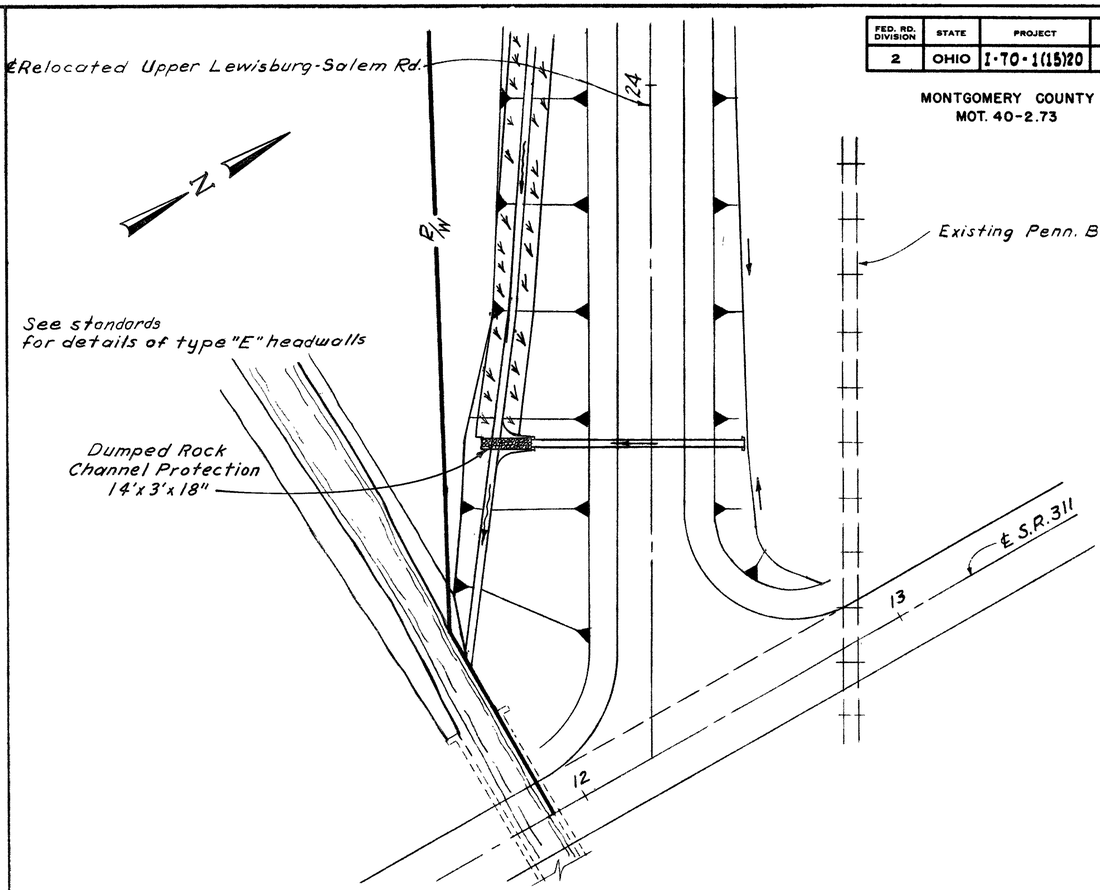
Area = 10 Acres
Q_{25} = 23 c.f.s.



CULVERT SECTION
Scale 1"=10'

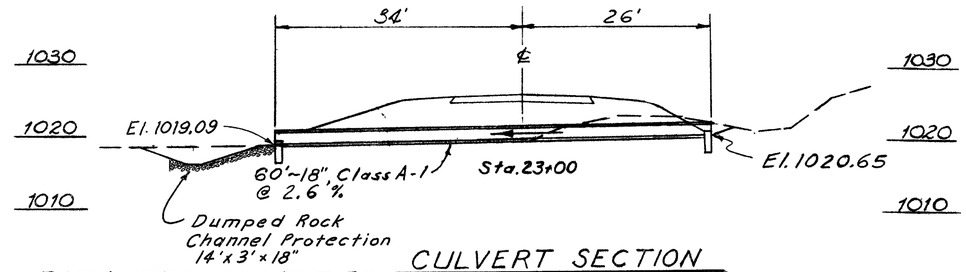
ESTIMATED QUANTITIES

I-1	24" Pipe Culvert, Cl. A-1 Sec. M-6.6(a) or M-6.8(b)	66 L.F.
I-1	8" Pipe, Cl. F-1	10 L.F.
I-2	Masonry, Std. Type "E" Hdwl.,	0.41 c.y.
I-8	Std. C.B. Type 2-3	1 each
I-10	Dumped Rock, 18" Thick	4.3 c.y.



PLAN
Scale: 1"=20'

AREA = 1.18 Acres
Q_{25} = 4.1 c.f.s.



CULVERT SECTION
Scale: 1"=10'

ESTIMATED QUANTITIES

I-1	18" Pipe Culvert, Class "A-1" Sec. M-6.6(a) or M-6.8(b)	60 L.F.
I-2	Masonry, Std. Type "E" Hdwl.	0.6 Cu. Yds.
I-10	Dumped Rock, 18" Thick	2.3 Cu. Yds.

Sta. 23+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
MOT. 40-2.73

DELOCATED UPPER LEWISBURG SALEM RD - CULVERT SECTION Sta. 48+80

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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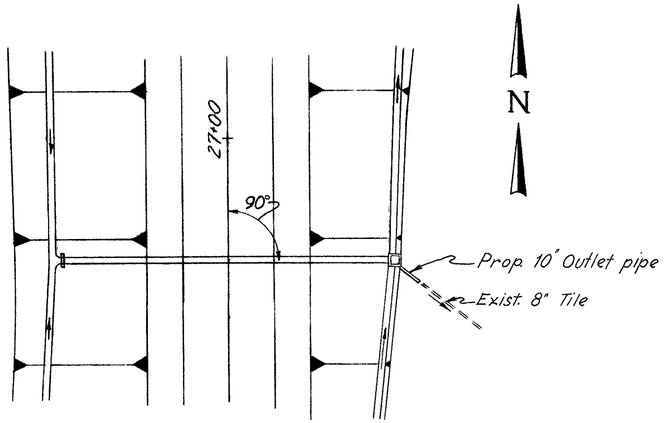
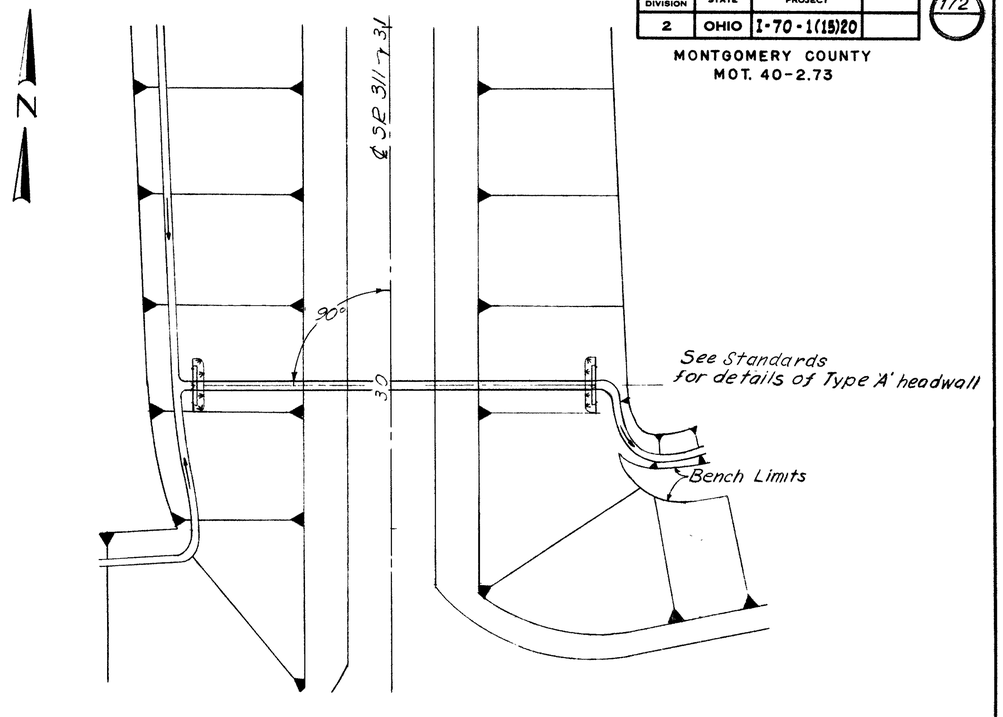
MONTGOMERY COUNTY
MOT. 40-2.73

See Standards For details of type "E" headwall.



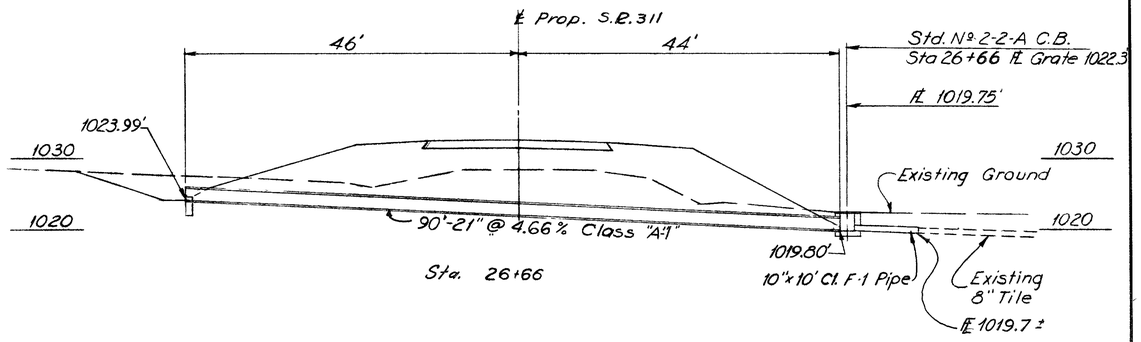
PLAN
SCALE: 1"=20'

AREA = 3.9 Acres
Q_{25} = 15 c.f.s.



PLAN
Scale: 1"=20'

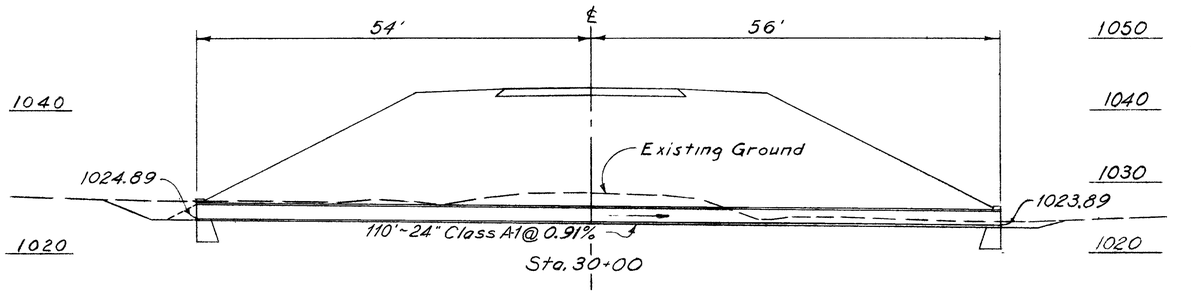
AREA = 6.85 Acres
Q_{50} = 25.5 c.f.s.



CULVERT SECTION
SCALE: 1"=10'

ESTIMATED QUANTITIES

I-1 21" Pipe Culvert, Class "A" 90 L.F.
Sec M-6.6 (b) or Sec. M-6.8 (b)
H 10" Pipe Class "F" 10 L.F.
I-2 Masonry Std. Type "E" Hdwl. 0.36 C.Y.
I-8 C.B. Type 2-2A 1 Ea.



CULVERT SECTION
Scale: 1" = 10'

ESTIMATED QUANTITIES

I-1	24" Pipe Culvert Cl. A-1, Sec. M-66 (c)	110 L.F.
I-2	Masonry, Std. Type A Hdwl.	10.8 c.y.
E-3	Channel Excavation	2 c.y.
L-10	Sodding	5.8 s.y.

S.R. 311 CULVERT SECTION Sta. 26+66 & Sta. 30+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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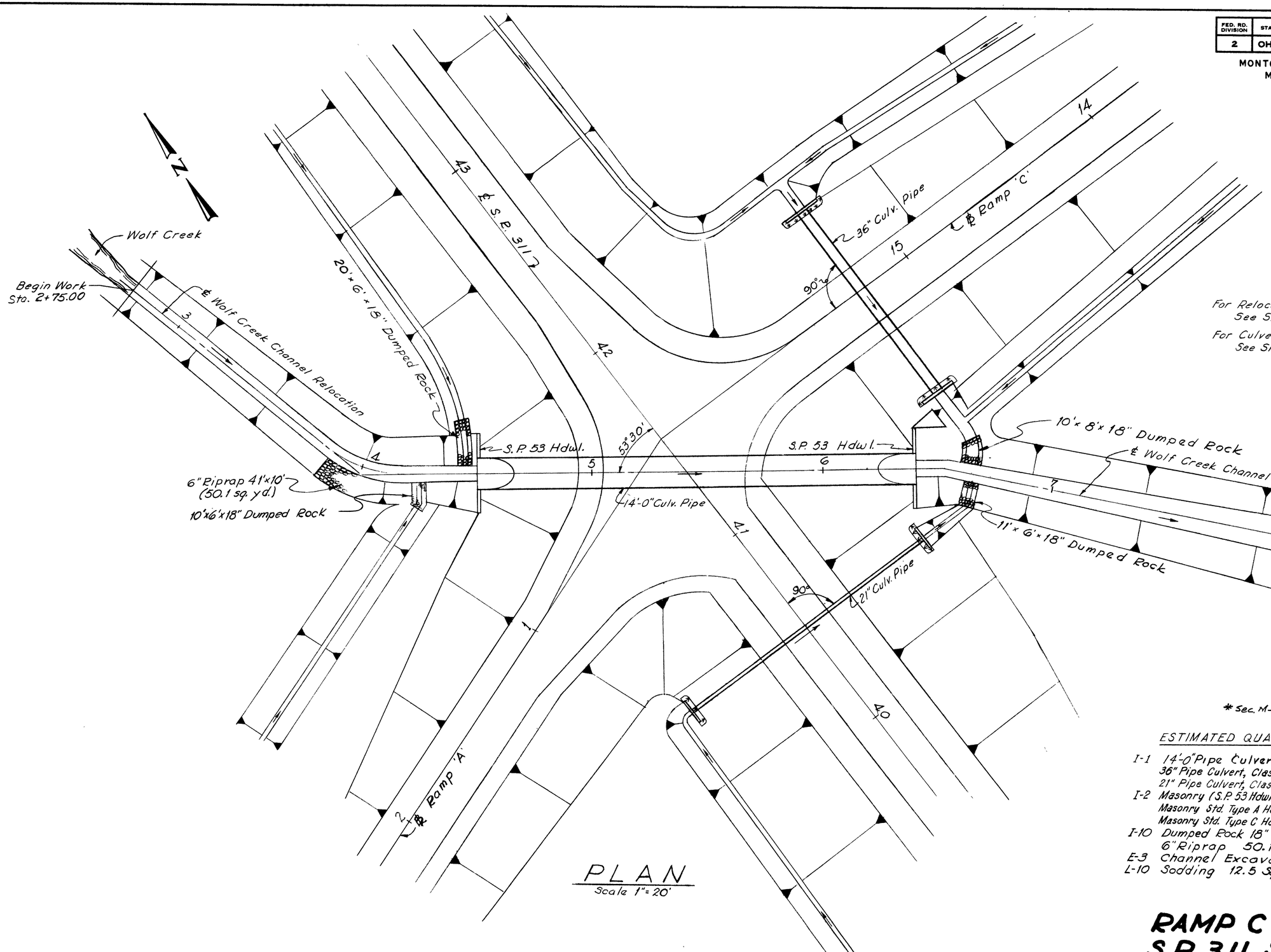
MONTGOMERY COUNTY
MOT. 40 - 2.73



PLAN
Scale 1" = 20'

For Relocation of Wolf Creek
See Sheets 126 to 127

For Culvert Sections
See Sheet No. 174

* Sec. M-6.6(c) or M-6.4(d)

ESTIMATED QUANTITIES

I-1	14'-0" Pipe Culvert, Cl. A-1, Sec. M-6.1(g), 5:3 Gage 190 L.F.
	36" Pipe Culvert, Class A-1* 100 Lin. Ft.
	21" Pipe Culvert, Class A-1, Sec. M-6.6(d), 126 Lin. Ft.
I-2	Masonry (S.P. 53 Hdwl) 44.2 Cu. Yds.
	Masonry Std. Type A Hdwl. 8.8 Cu. Yds.
	Masonry Std. Type C Hdwl. 16.0 Cu. Yds.
I-10	Dumped Rock 18" Thick 18.1 C.Y.
	6" Riprap 50.1 Sq. Yds.
E-3	Channel Excavation See Sht. No. 125
L-10	Sodding 12.5 Sq. Yds.

RAMP C Sta. 15+25
S.R. 311 Sta. 40+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)120	

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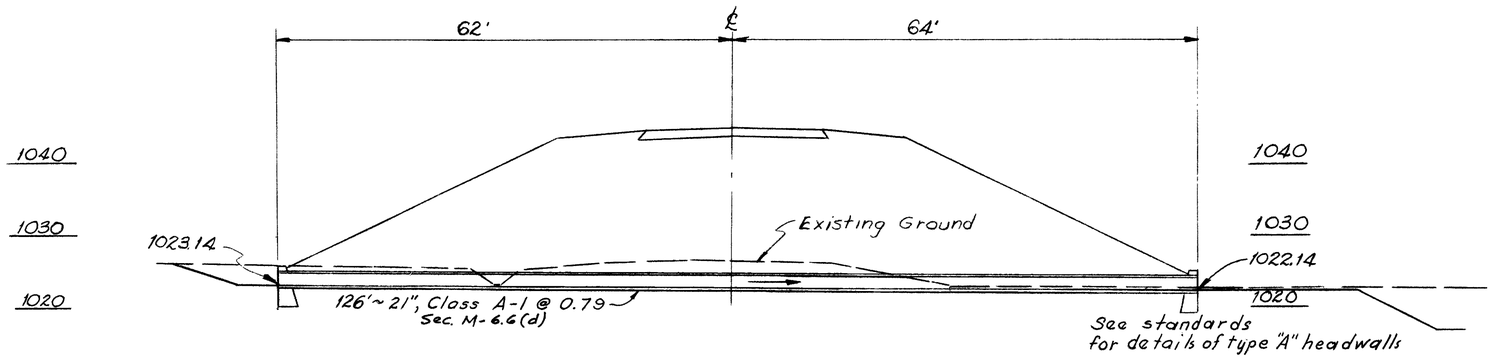
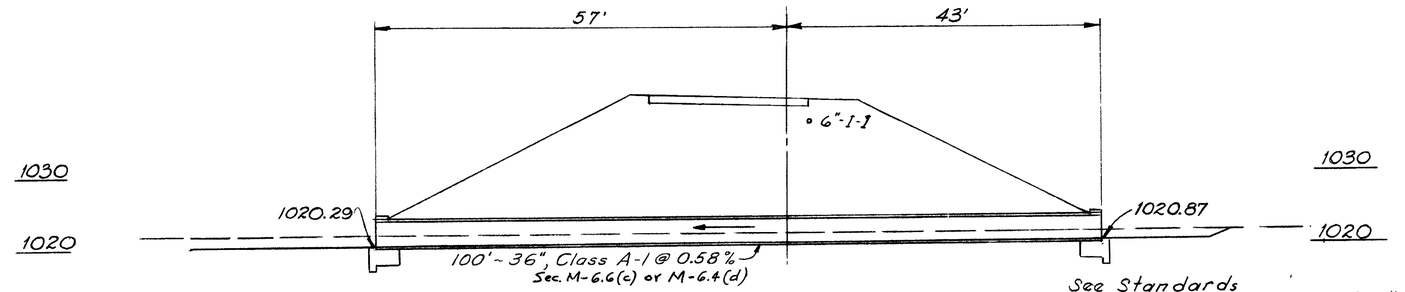
MONTGOMERY COUNTY
MOT. 40-2.73



CULVERT @ S.R.311 Sta. 40+50
Scale 1"=10'

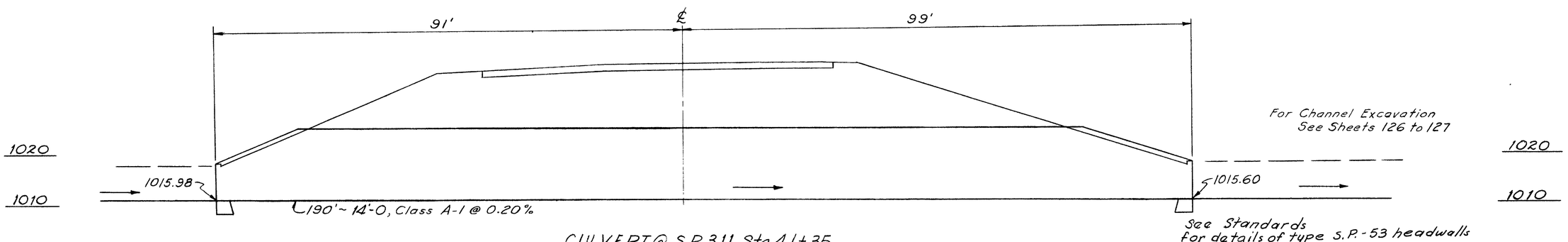
Area = 3.15 Acres
Q50 = 11.7 c.f.s.



CULVERT @ Ramp C Sta. 15+25
Scale 1"=10'

Area = 15 Acres
Q50 = 49 c.f.s.

Dimensions For S.P.-53 Hdwl.
For Detail, See Std. Dwg. S.P.-53



For Channel Excavation
See Sheets 126 to 127

CULVERT @ S.R.311 Sta. 41+35
Scale 1"=10'

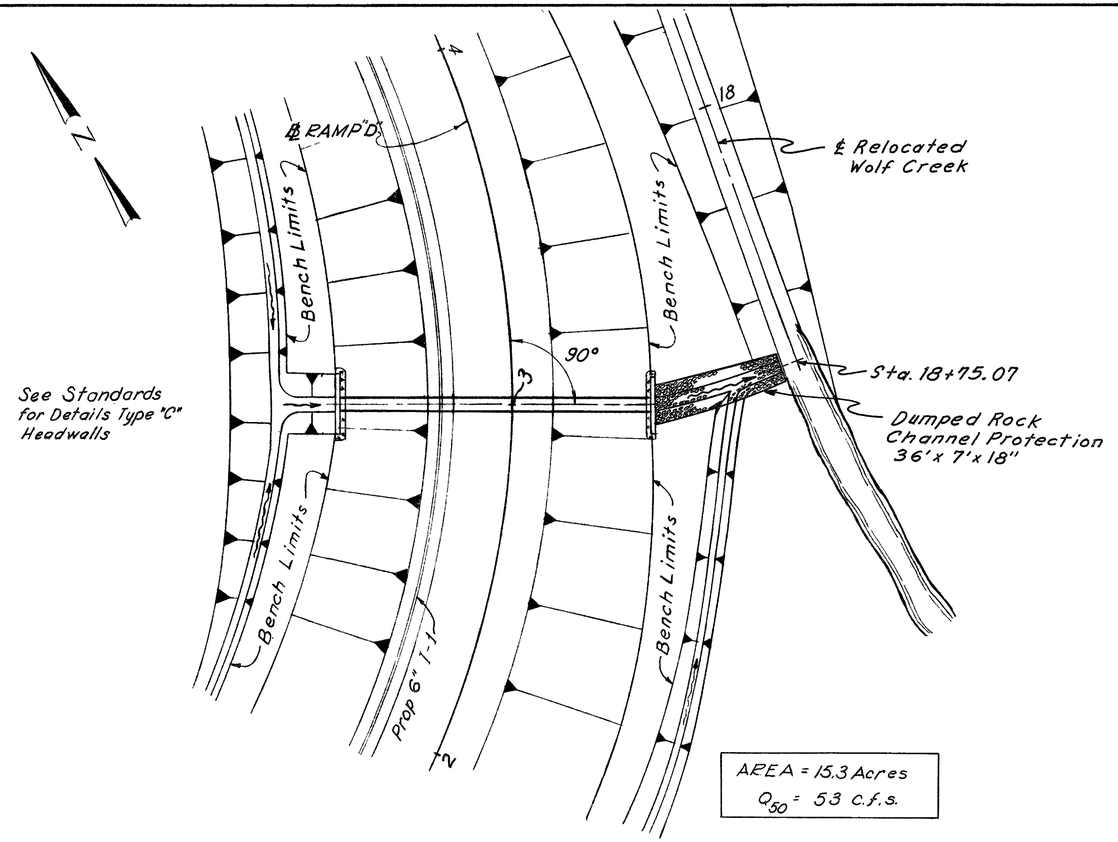
Area = 5.8 sq. mi.
Q50 = 1064 c.f.s

RAMP C Sta. 15+25
S.R.311 Sta. 40+50
CULVERT SECTIONS S.R.311 Sta. 41+35

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

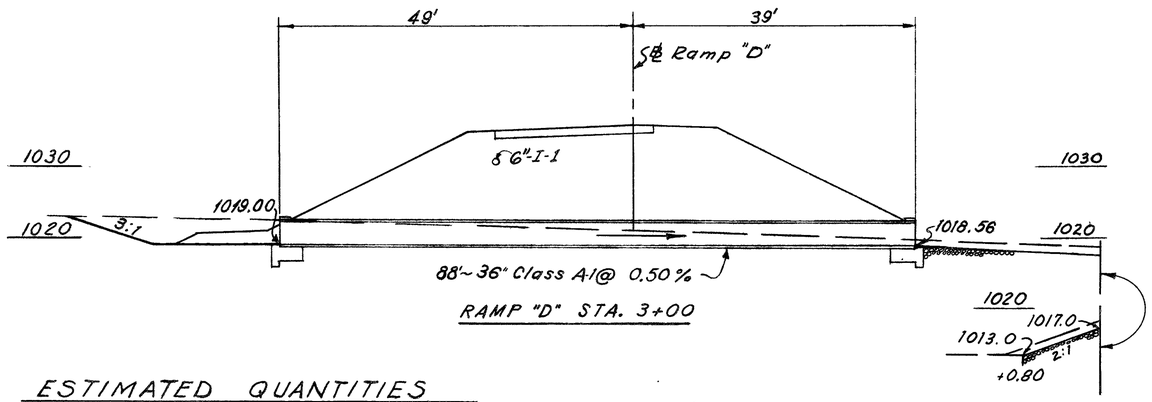
175

MONTGOMERY COUNTY
MOT. 40-2.73



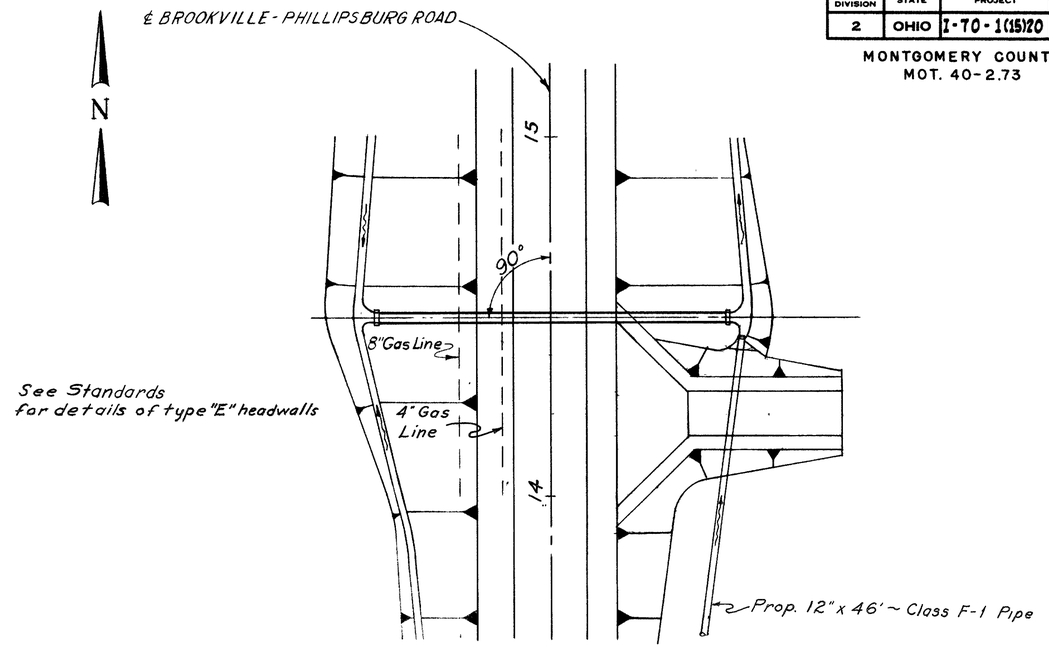
AREA = 15.3 Acres
Q_{50} = 53 c.f.s.

PLAN
Scale 1"=20'



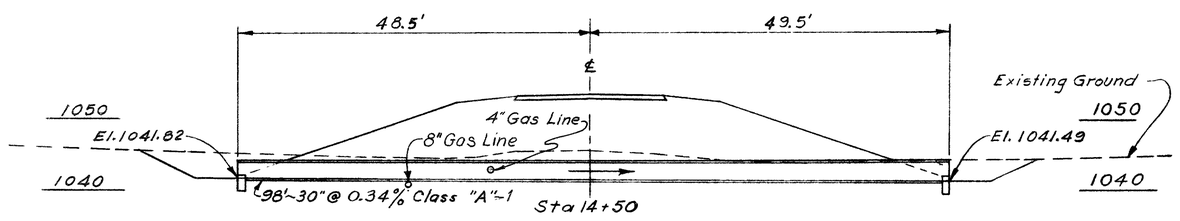
ESTIMATED QUANTITIES

I-1 36" Pipe Culvert, Class A-1, 88 L.F. Sec. M-6.6(c) or M-6.4(d)
I-2 Masonry, Std. Type "C" Hdwl. 18.0 C.Y.
I-10 Dumped Rock, 18" Thick 14.0 C.Y.
L-10 Sodding 7.16 Sq. Yds.
E-3 Channel Excavation 10.7 C.Y.



PLAN
Scale: 1"=20'

AREA = 38 Acres
Q_{25} = 28 c.f.s.



CULVERT SECTION
Scale: 1"=10'

ESTIMATED QUANTITIES

I-1 30" Pipe Culvert Class "A-1" Sec. M-6.6(b) or M-6.8(b) 98' Lt.

I-2 Masonry, Std. Type "E" Headwalls 1.0 c.yds.

BROOKVILLE-PHILLIPSBURG ROAD STA. 14+50
2 RAMP INTERCHANGE RAMP "D" CULVERT SECTION

FED RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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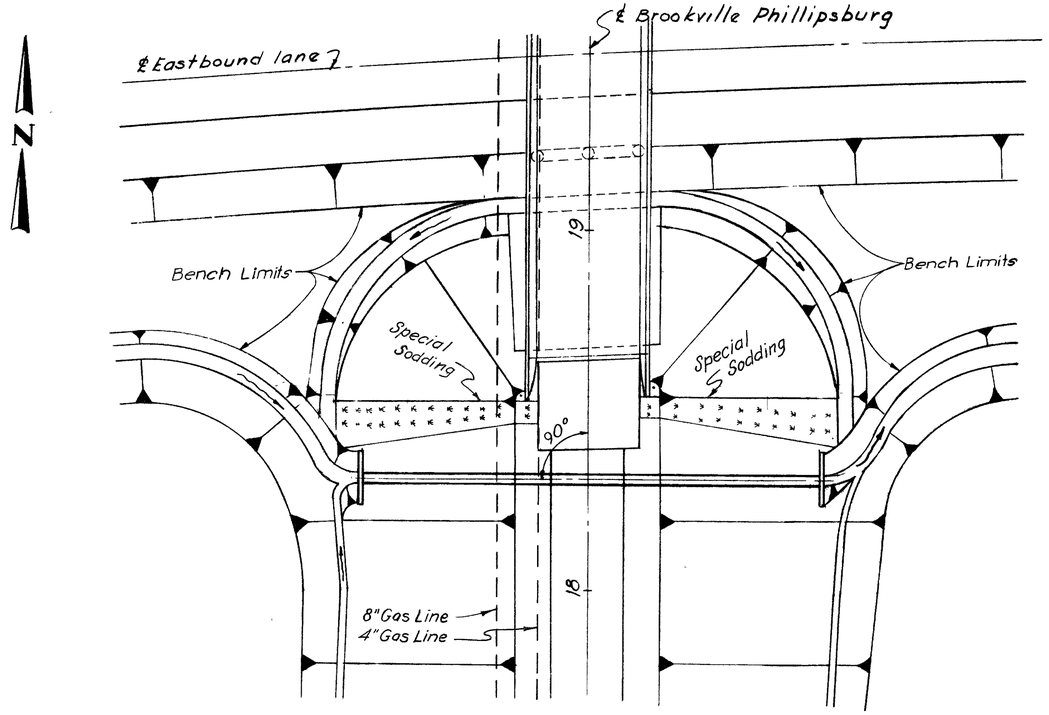
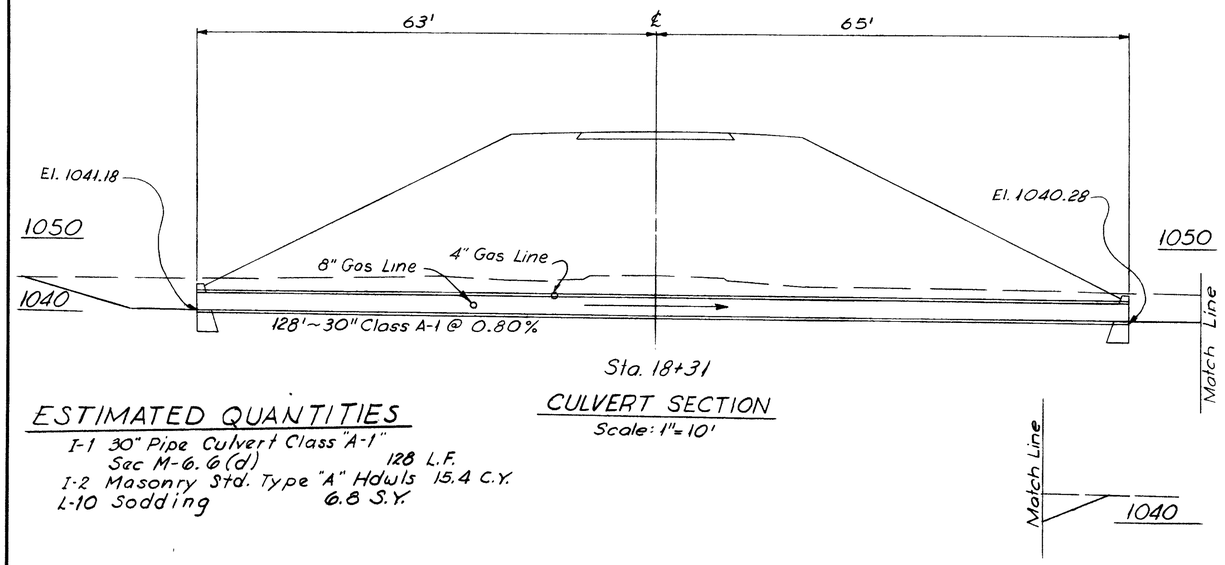
MONTGOMERY COUNTY
MOT. 40-2.73



See Standards
for details of type "A" headwalls

PLAN
Scale 1"=20'

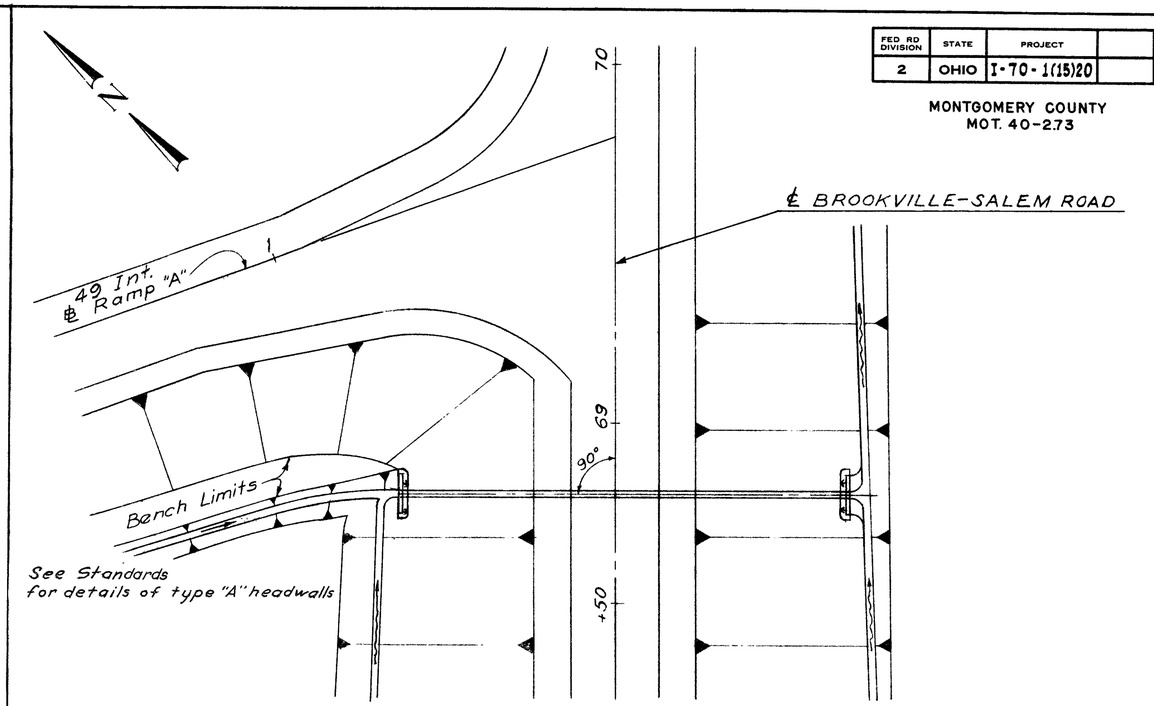
AREA = 27 Acres
Q_{50} = 34.5 c.f.s.



CULVERT SECTION
Scale: 1"=10'

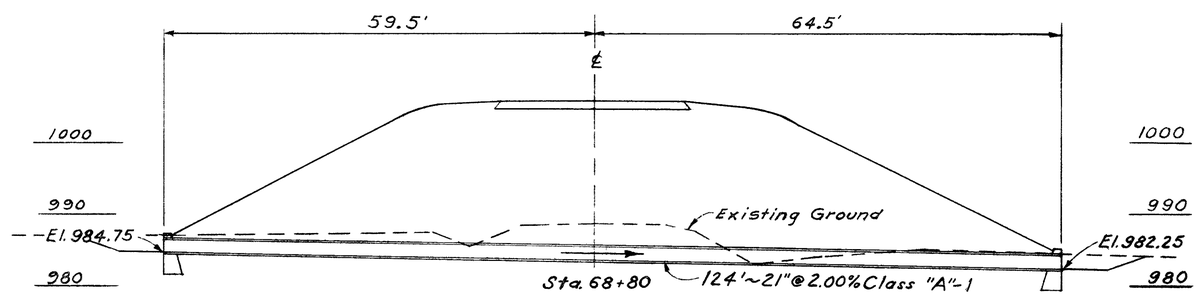
ESTIMATED QUANTITIES

I-1 30" Pipe Culvert Class "A-1" Sec M-6.6(d) 128 L.F.
I-2 Masonry Std. Type "A" Hdwls 15.4 C.Y.
L-10 Sodding 6.8 S.Y.



PLAN
Scale: 1"=20'

AREA = 4 Acres
Q_{50} = 19.5 c.f.s.



CULVERT SECTION
Scale: 1"=10'

ESTIMATED QUANTITIES

I-1 21" Pipe Culvert Class "A"-1 Sec M-6.6(d) 124 L.F.
I-2 Masonry, Std. Type "A" Headwall 8.8 C.Y.
L-10 Sodding 5.3 S.Y.

BROOKVILLE-SALEM ROAD

STA. 68+80

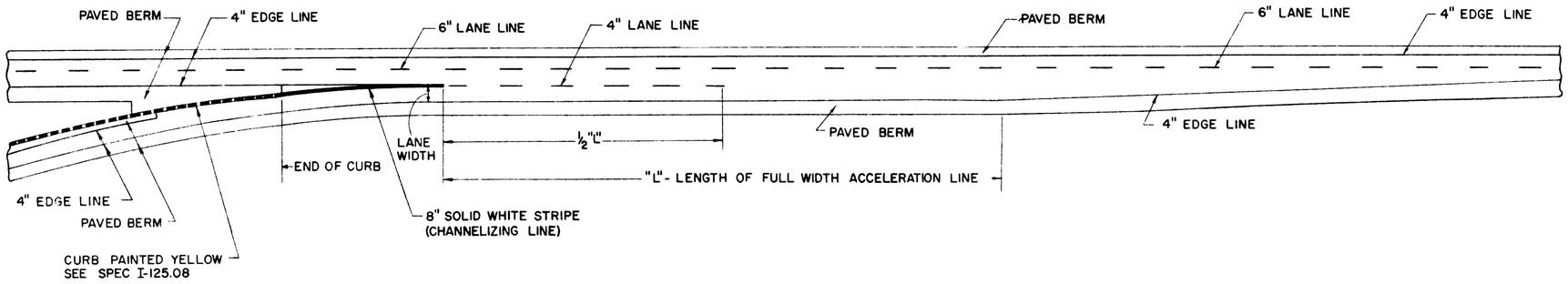
BROOKVILLE PHILLIPSBURG RD
STA. 18+31

FED RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

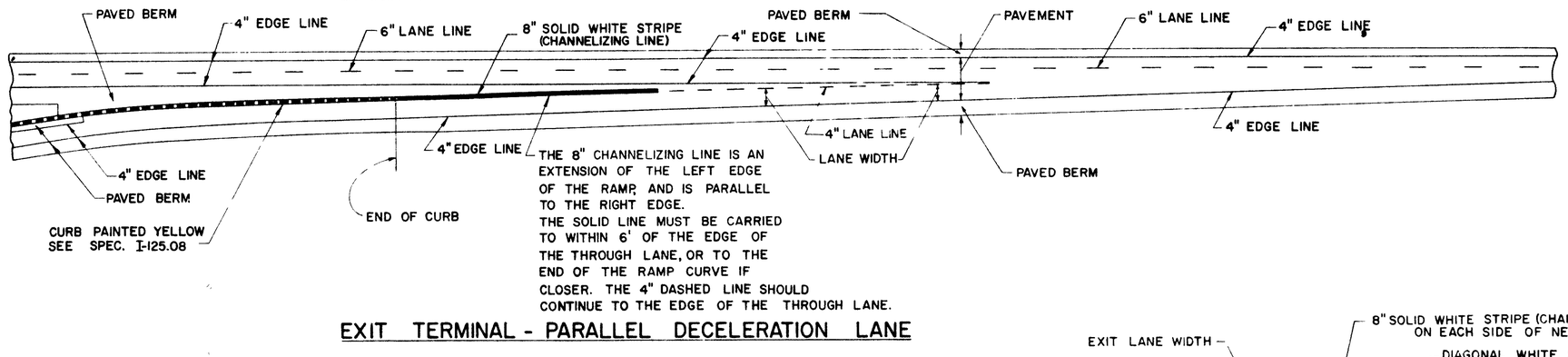
176A

MONTGOMERY COUNTY
MOT. 40- 2.73

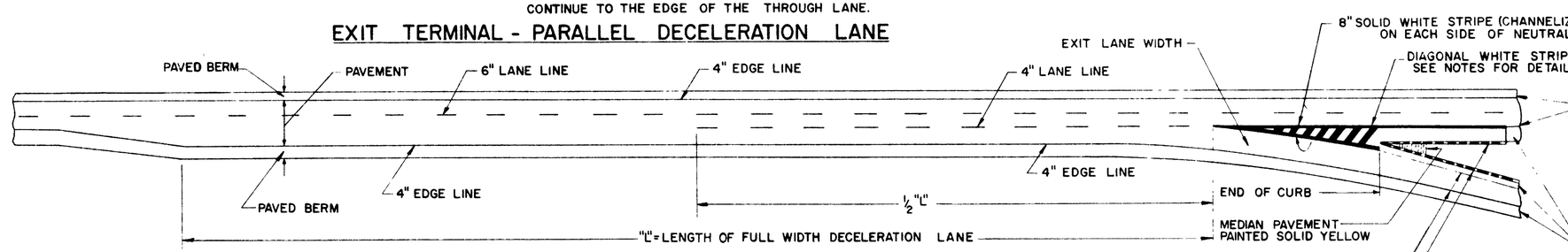
ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE



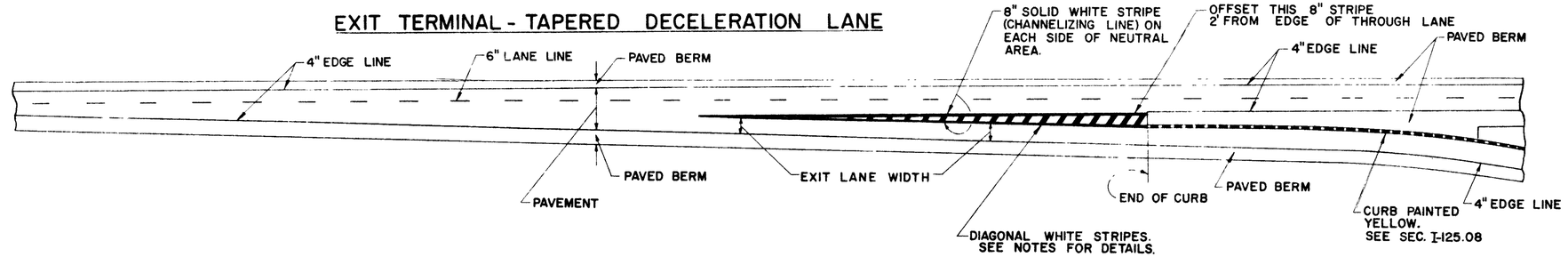
ENTRANCE TERMINAL - TAPERED ACCELERATION LANE



EXIT TERMINAL - PARALLEL DECELERATION LANE



EXIT TERMINAL - TAPERED DECELERATION LANE



NOTES

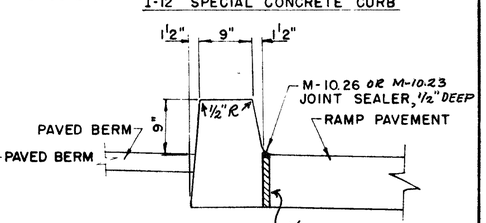
EDGE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No I-125 AND DEFINED IN SECTION I-125.06.

LANE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. I-125 AND DEFINED IN SECTION I-125.07.

CHANNELIZING LINES SHALL BE CONTINUOUS WHITE BEADED STRIPES 8" IN WIDTH PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. I-125 AND DEFINED IN SECTION I-125.07 b.

DIAGONAL STRIPES IN EXIT RAMP MARKINGS SHALL BE 2' WIDE WHITE BEADED STRIPES SET AT A 45° ANGLE TO THE CENTER LINE OF THE THROUGH PAVEMENT AND SLANTED IN THE DIRECTION OF THE FLOW OF TRAFFIC ON SAID PAVEMENT. SPACE BETWEEN THE 2' DIAGONAL STRIPES SHALL BE 6' AS MEASURED PARALLEL TO THE CENTER LINE OF THE THROUGH PAVEMENT. PAINT ON THE DIAGONAL STRIPES SHALL BE APPLIED AT THE RATE OF ONE GALLON TO EACH 100 SQUARE FEET AND GLASS BEADS SHALL BE APPLIED AT THE RATE OF SIX POUNDS PER GALLON OF PAINT. DIAGONAL WHITE STRIPES SHALL BE PLACED BETWEEN THE TWO 8" WHITE CHANNELIZING LINES AT EXIT RAMPS AS SHOWN TO CONFORM TO SUPPLEMENTAL SPECIFICATION No. I-125 AND DEFINED IN SECTION I-125.07 c.

I-12 SPECIAL CONCRETE CURB



DETAIL SPECIAL PORTLAND CEMENT CONCRETE CURB

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING	PM-1	DATE 7-17-61 4-6-62

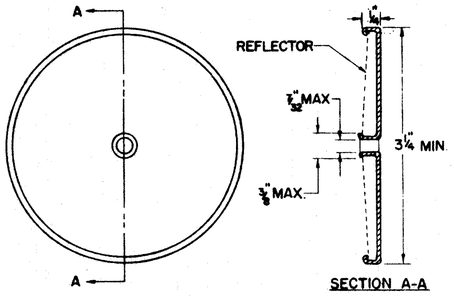
APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

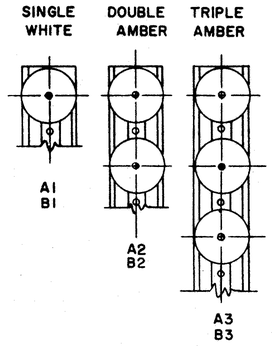
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

176B

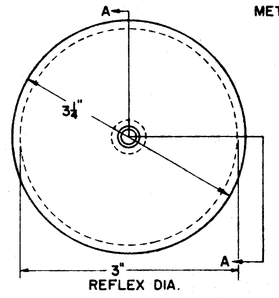
MONTGOMERY COUNTY
MOT. 40-2.73

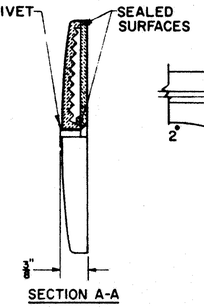
TYPE A



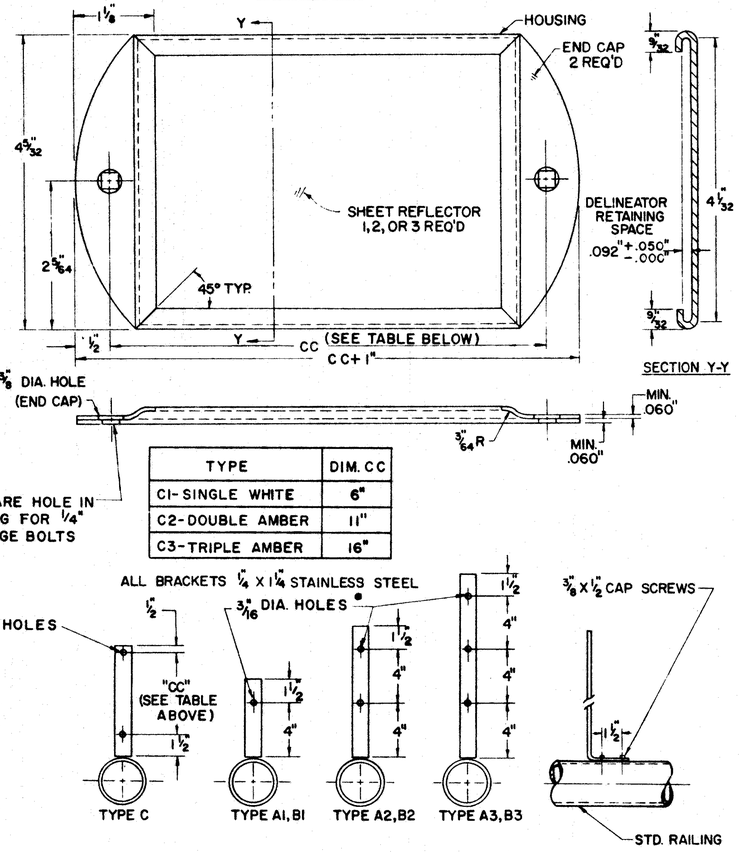


TYPE B



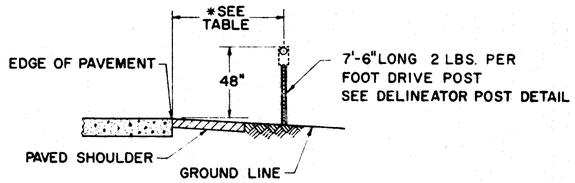


TYPE C



TYPE	DIM. CC
C1- SINGLE WHITE	6"
C2- DOUBLE AMBER	11"
C3- TRIPLE AMBER	16"

BRIDGE RAIL BRACKET

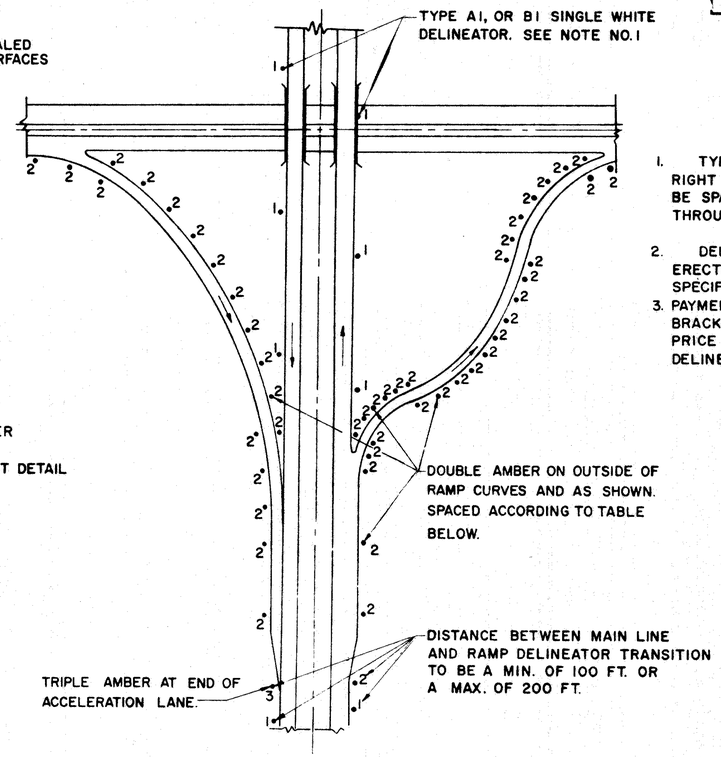


LATERAL PLACEMENT OF DELINEATORS

* TABLE

TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE WHITE	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE
TRIPLE AMBER	12'-6"	6" OUTSIDE

** THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.



TYPICAL DELINEATOR USE

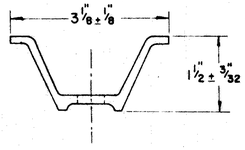
NOTES

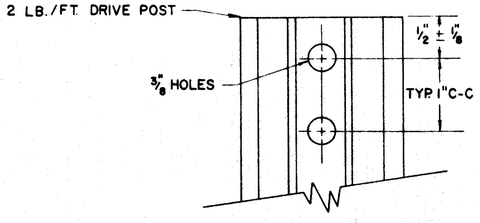
1. TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES.
2. DELINEATORS SHALL BE FURNISHED AND ERECTED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION NO. I-127, (1-15-62).
3. PAYMENT FOR SUPPORTS (DRIVEPOST OR BRACKET) SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR "ITEM I-127 DELINEATORS".

DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

RADII, FT. FROM	RADII, FT. TO	SPACING ON CURVE	SPACING 1ST SPACE*
TANGENT	2,276	100'	100'
2,275	1,801	90'	100'
1,800	1,401	80'	100'
1,400	1,001	70'	100'
1,000	751	60'	100'
750	551	50'	80'
550	326	40'	70'
325	——	30'	60'

* FIRST SPACE IN ADVANCE AND BEYOND CURVE.





DELINEATOR POST

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR DETAILS

I-127

DATE
12-27-61
1-15-62
5-14-62
7-25-62

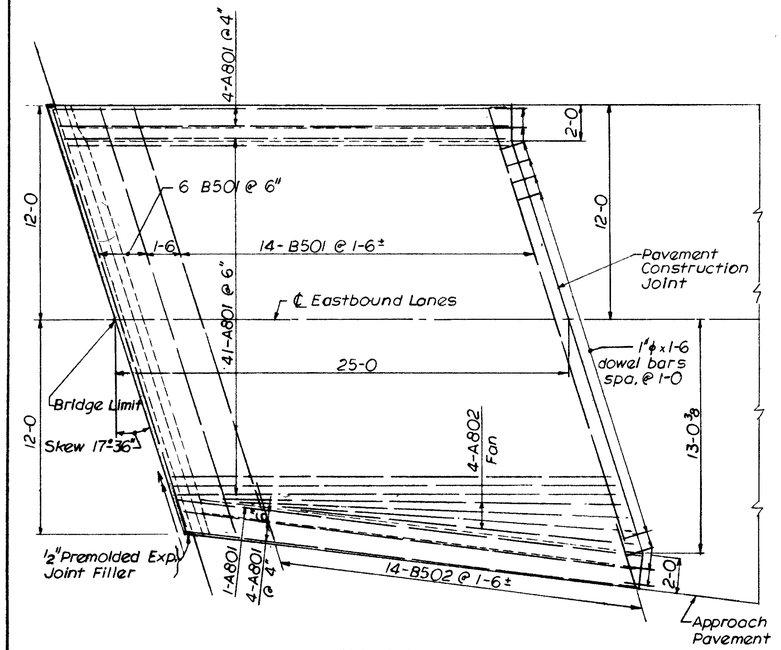
APPROVED Robert E. Conner
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT		177
2	OHIO	I-70-1(15)20		

MONTGOMERY COUNTY
MOT. 40-2.73

Bridge No. Mot. - 40-0344
Total Approach Slab Item I-7 = 355.6 Sq. Yds.

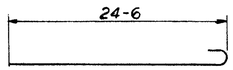
Bridge No. Mot. - 40-0664R
Total Approach Slab Item I-7 = 133.3 Sq. Yds.



PLAN

REINFORCING STEEL LIST
(FOR ONE APPROACH SLAB)

Mark	No. Req'd	Length	Weight
A801	48	25-7	3278
A802	4	20-0	214
B501	20	24 8	515
B502	14	4-0	58



A801 Bar

Concrete for Right Bridge Fwd. Abutment Approach Slab Item I-7 = 71.0 Sq. Yds.

NOTES: All bars are straight except A801
For additional details and notes see Std. Drwg. AS-1-54

BRIDGE NO. MOT-40-0296 RIGHT BRIDGE
APPROACH SLAB AT FWD. ABUTMENT

Bridge No. Mot. - 40-0296
Total Approach Slab Item I-7 = 282.6 Sq. Yds.

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

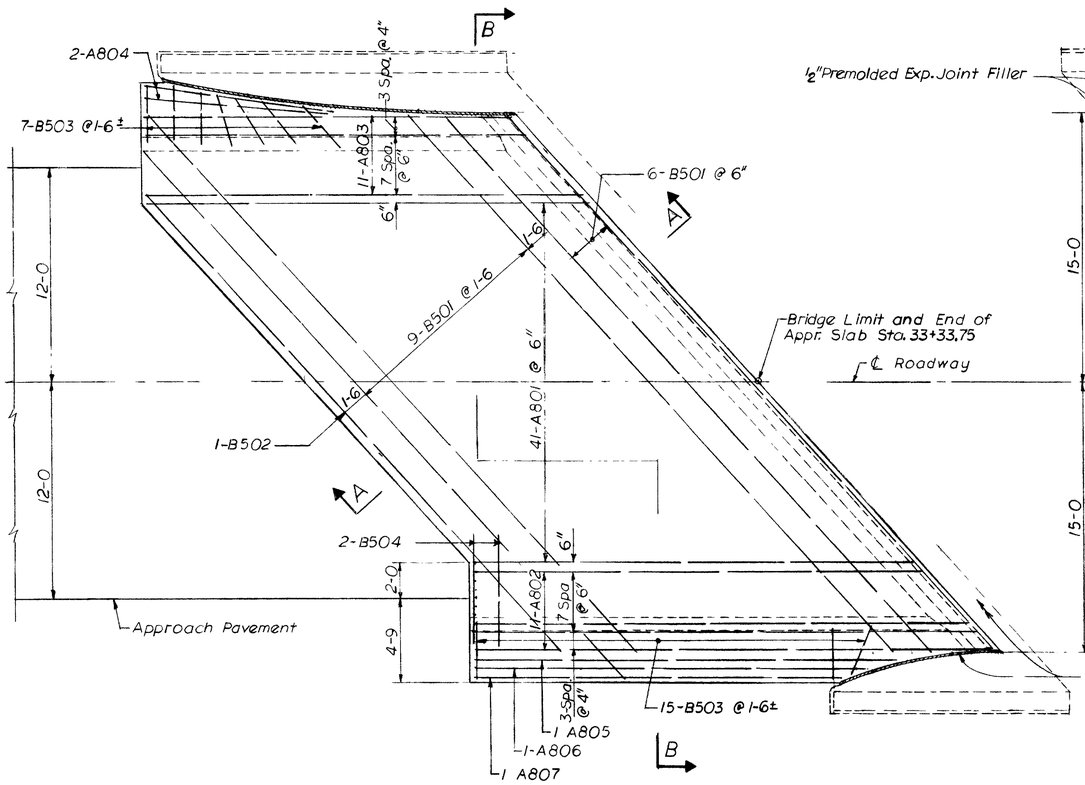
APPROACH SLAB DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V. B		B.H.			

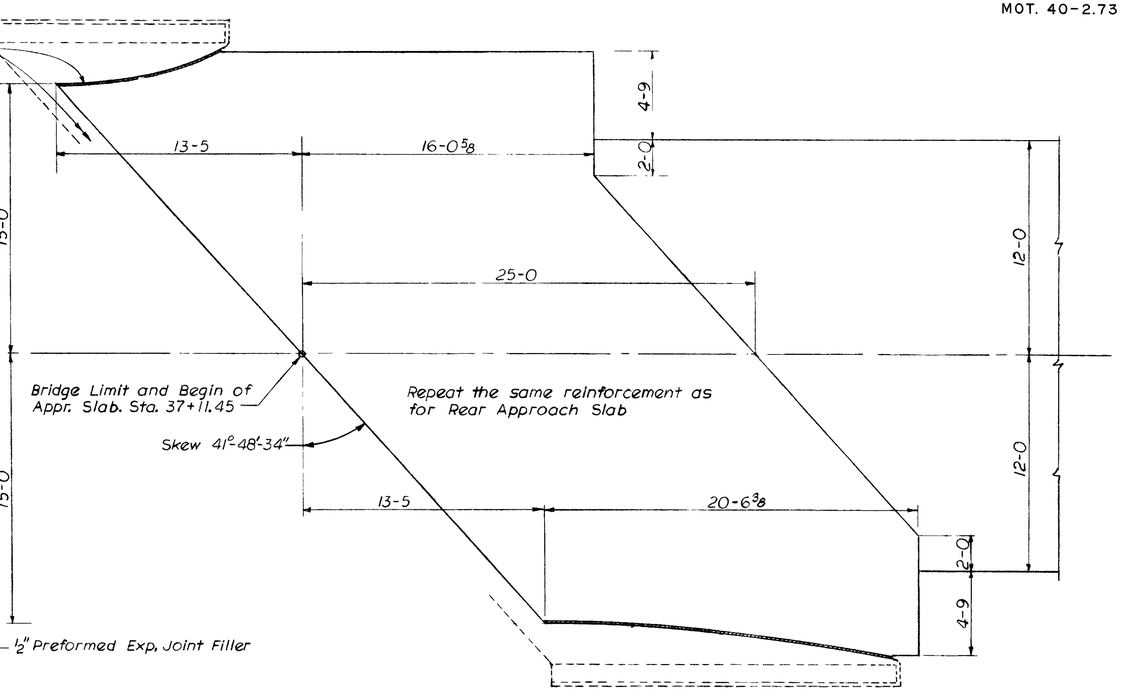
FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

178

MONTGOMERY COUNTY
MOT. 40-2.73

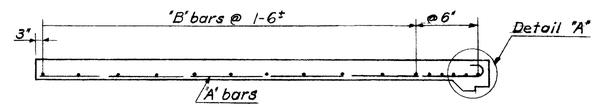


REAR APPROACH SLAB

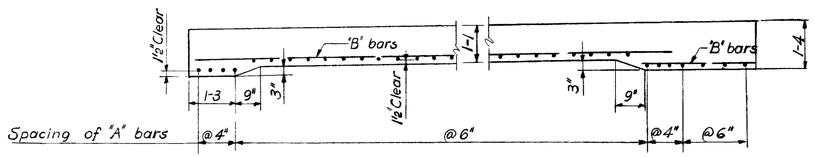


FORWARD APPROACH SLAB

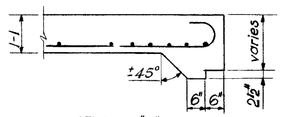
Note: dimensions for approach slabs are identical by 180° rotation.



SECTION A-A



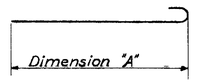
SECTION B-B



DETAIL "A"

PLAN

REINFORCING STEEL LIST				
Mark	No. Req'd.	Length	Dimension A	Weight
A801	82	25-7	24-6	5600
A802	2 Series of 11	Varies from 25-8 to 29-10 5" increments	Varies from 24-7 to 28-9	1630
A803	2 Series of 11	Varies from 25-2 to 21-0 5" increments	Varies from 24-1 to 19-11	1356
A804	4	10-6		112
A805	2	23-6		125
A806	2	21-9		116
A807	2	20-3		108
B501	30	39-9		1244
B502	2	34-0		71
B503	44	3-0		138
B504	4	6-0		25



NOTE: All bars are straight except A801, A802 & A803

Bridge No. Mot.-40-03.36
Total Approach Slab Item I-7 = 179 Sq. Yds.

NOTE:

½" Premolded exp. jt. filler at the edges of the approach slab shall be included with the approach slab for payment.
For additional notes see Std. Drwg. AS-1-54

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

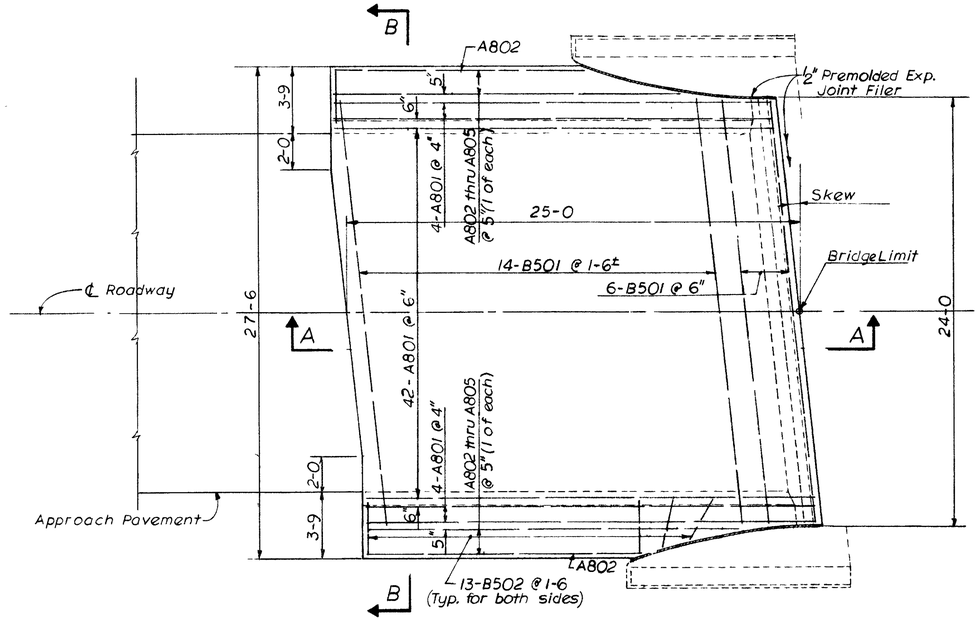
APPROACH SLAB DETAILS
BRIDGE NO. MOT-40-0336

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V.B.		E.H.			

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

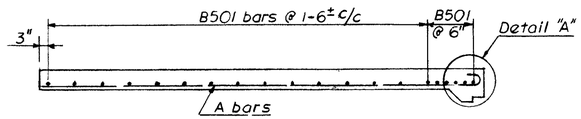
179

MONTGOMERY COUNTY
MOT. 40-2.73

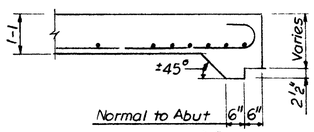


PLAN

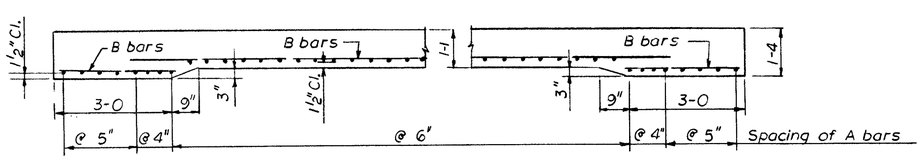
APPROACH SLAB DATA				CONCRETE For One Appr. Slab	TOTAL CONCRETE
BRIDGE NO.	END OF APPR. SLAB	BEGIN OF APPR. SLAB	ANGLE OF SKEW	ITEM I-7 SQ. YDS.	ITEM I-7 SQ. YDS.
MOT-40-0452	Sta. 18+64.25	Sta. 21+35.75	Rt. Fwd. 2°-34'-26"	74	148
MOT-40-0553	Sta. 23-12.05	Sta. 25-54.57	Lt. Fwd. 6°-20'-59"	74	148



SECTION A-A

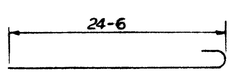


DETAIL "A"



SECTION B-B

REINFORCING STEEL LIST (FOR ONE APPROACH SLAB)			
Mark	No Req'd	Length	Weight
A801	50	25-7	3415
A802	2	15-0	80
A803	2	16-0	85
A804	2	17-6	93
A805	2	19-6	104
B501	20	23-8	493
B502	26	3-0	81



A801 Bar

NOTE: All bars are straight except A801

NOTE:
½" Premolded Exp. jt. filler at the edges of the approach slab shall be included with the approach slab for payment.
For additional notes see Std. Drwg. AS-1-54

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

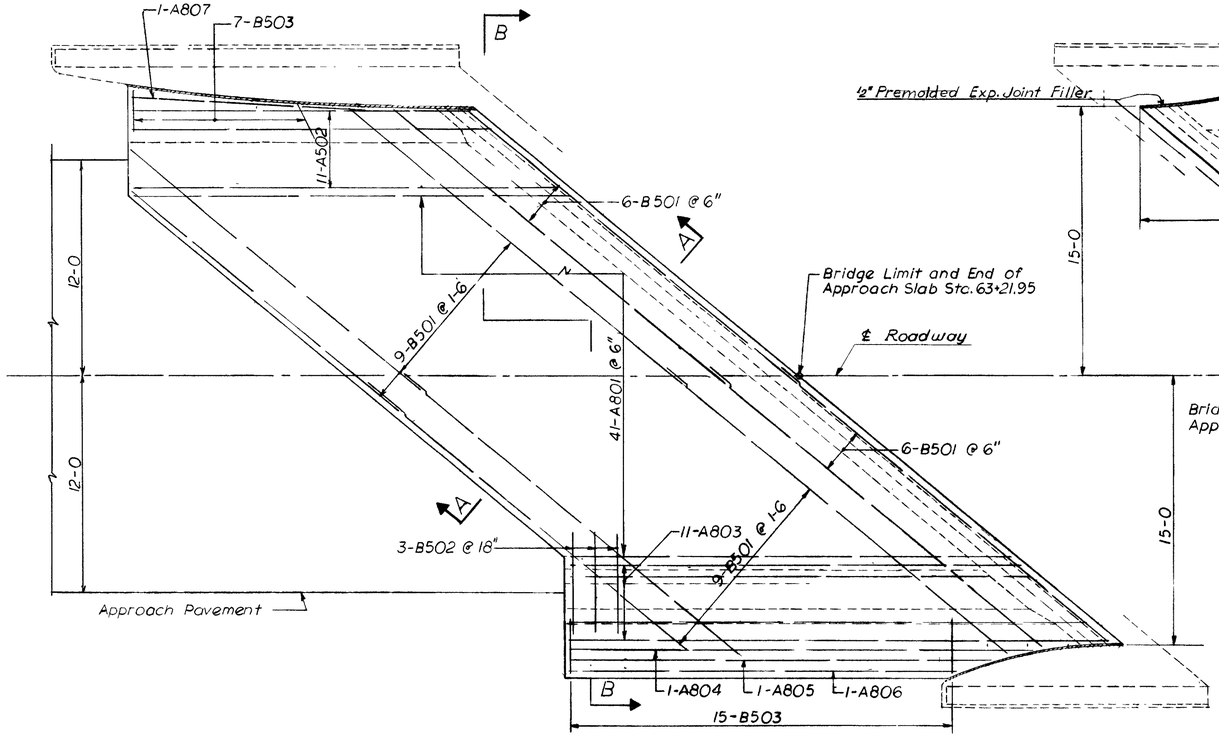
APPROACH SLAB DETAILS

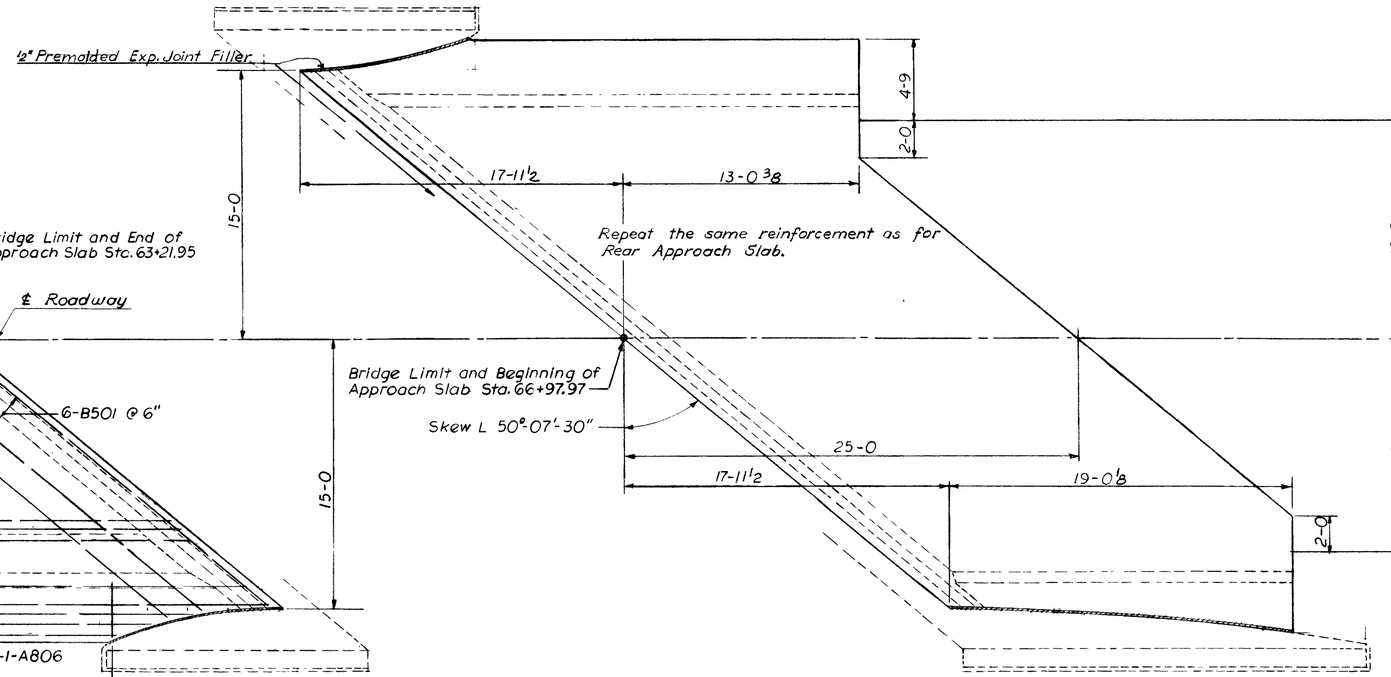
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V. B.		B.H.			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

180

MONTGOMERY COUNTY
MOT. 40-2.73

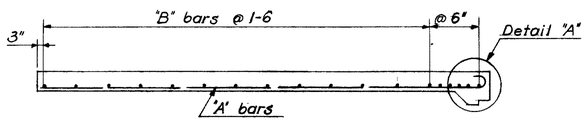




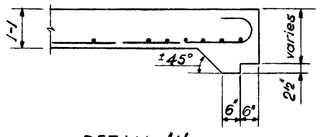
PLAN

REAR APPROACH SLAB

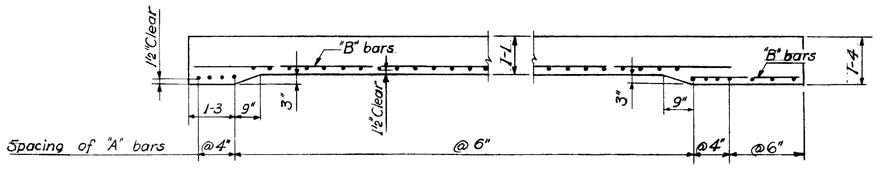
For dimensions see Forward Approach Slab.



SECTION A-A



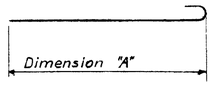
DETAIL "A"



SECTION B-B

FORWARD APPROACH SLAB

REINFORCING STEEL LIST				
Mark	No. Reqd.	Length	Dimension "A"	Weight
A801	82	25-7	24-6	5600
A802	2 series of 11	Varies from 25-2 to 19-4 7" increments	Varies from 24-1 to 18-3	1332
A803	2 series of 11	Varies from 31-7 to 25-9 7" increments	Varies from 30-6 to 24-8	1684
A804	2	25-6		136
A805	2	23-0		123
A806	2	21-0		112
A807	2	13-0		69
B501	60	24-3		1518
B502	6	6-6		41
B503	44	3-0		138



NOTE: All bars are straight except A801, A802 & A803

NOTE:
For notes see Std Drawing AS-1-54

Bridge No. Mot.-40-05.94
Total Approach Slab Item I-7=179 Sq. Yds.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

APPROACH SLAB DETAILS
BRIDGE NO. MOT-40-05.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V. B.					

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

181

MONTGOMERY COUNTY
MOT. 40-2.73

Telephone & Western Union lines (29 wires, iron) PENNSYLVANIA R.R.

1# 7200 Volt distribution pole line (3-wires) DAYTON POWER & LIGHT Co.

6" Tile

Sta. 156+90.36 ℄ I.R.70
Sta. 20+00.00 ≠ Penn. B & O.R.R.

42" Culvert

Limits of crushed aggregate slope protection

Critical Clearance Point A

Limits of crushed aggregate slope protection

Ramp

℄ Westbound Lanes

Ramp "A" Sta. 25+49.53
≠ Sta. 157+39.42 ℄ I.R.70

End Approach Slab Sta. 155+57.64

Begin Approach Slab Sta. 157+60.36

Skew 17°36'

2:1 (Nominal)

(Existing 30" ≠ C.I. Pipe to be Removed)

Existing Tiles (To be Abandoned)

12" Tile

Ramp "B" Sta. 0+00.00
Sta. 157+81.30 ℄ I.R.70

100' Taper

℄ Eastbound Lanes

Ramp

12" Tile

Sta. 156+31.50 ℄ I.R.70

Limits of crushed aggregate slope protection

Bridge Limits

Bench Limits

℄ Relocated Upper Lewisburg-Salem Road

Limits of crushed aggregate slope protection

℄ PENN.-B & O. R.R.

Mile Post 1801.6' S.E. from ℄ Intersection.

P.V.I. Sta. 159+00.00
El. 1078.35
L.V.C. = 2150'

+1.75%

-3.0%

Design Clearance
Actual Clearance

Sta. 155+57.64

Sta. 157+60.36

H.P. Sta. 156+17.10
El. 1066.468
K = 1.046540

Pavement

Ftg. El. 1054.81 W.B.
El. 1054.66 E.B.

El. 1054.69 W.B.
El. 1054.95 E.B.

Ftg. El. 1031.00

Ftg. El. 1032.00

Ftg. El. 1032.00

T/Rail @ Point A
El. 1063.56

Steel H Bearing Piles 10BP42
The estimated average pay length of piles 49 ft.
(Typ. for all abutments.)

Steel H Bearing Piles 10BP42
The estimated average pay length of piles 28 ft.
(Typ. for all piers)

Existing Ground

PROFILE on ℄ I.R.70

NOTE:
For Drainage Details see Roadway Plans.

℄ I.R.70

FOUNDATION SOUNDINGS:
Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division office.

◆ = Drive Rod Penetration Test
⊕ = Drive Sample Boring

PROPOSED STRUCTURE

Type: 4-span continuous steel beams with reinforced concrete deck and reinforced concrete substructure.
Spans: 44-0; 55-0; 55-0 & 44-0 c. to c. bearings.
Roadway: Two @ 42-0 f/f concrete parapets 1-2 safety curbs.
Load Frequency: C.F. 2000 (57) (Adequate for AASHO alternate loading)

Skew: 17° 36' Rt. Fwd.
Wearing Surface: 1"-Monolithic concrete
Approach Slabs: A.S.-1-54 (25' Long)
Alignment: Tangent.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SITE PLAN

BRIDGE NO. MOT-40-0296 L/R
I.R.-70 OVER PENN.-B & O. R.R.

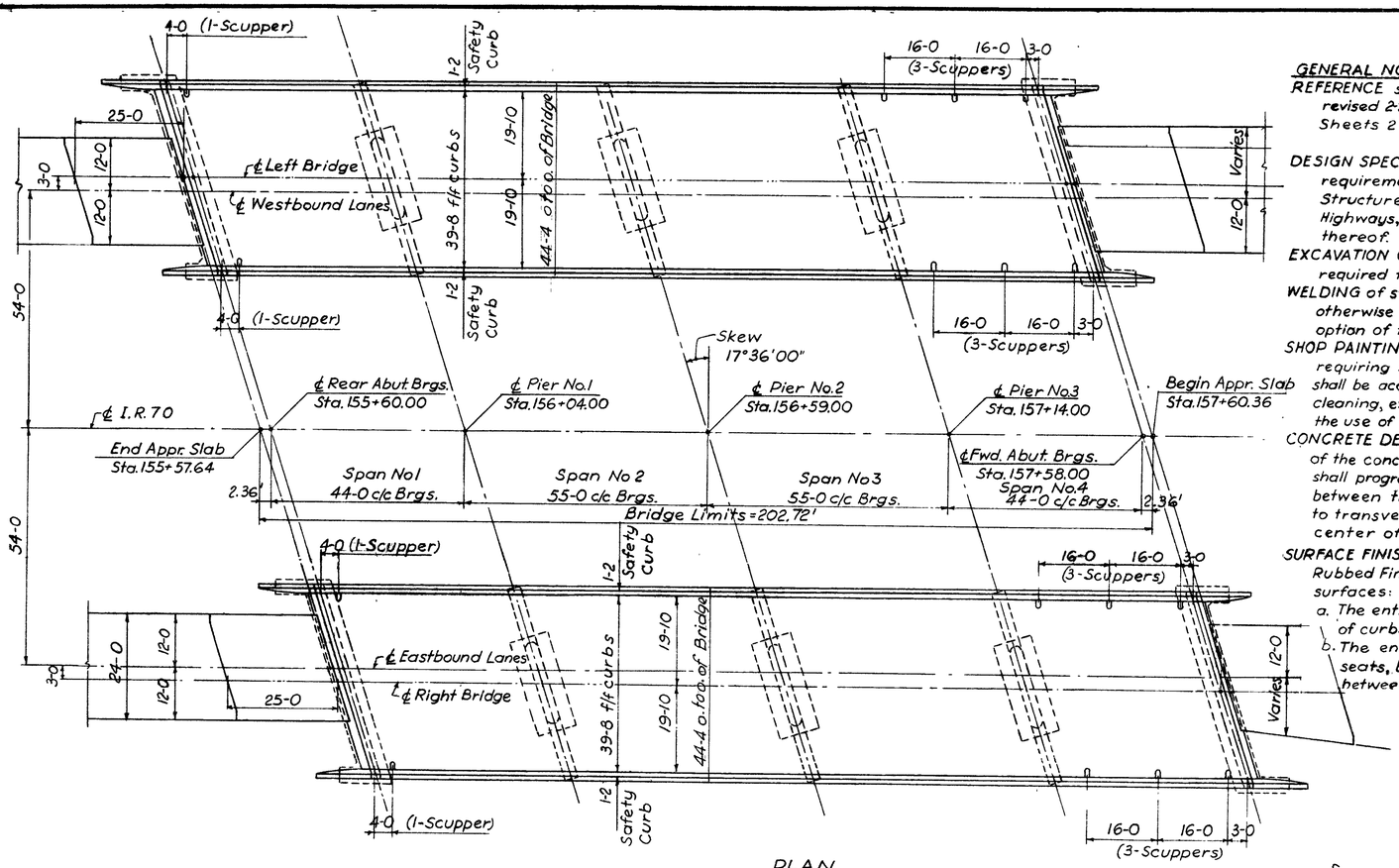
MONTGOMERY CO. I.R.-70
SEC. PRE. 40-14.11
MOT-40-2.73 STA. 156+90.36

SCALE 1" = 20'

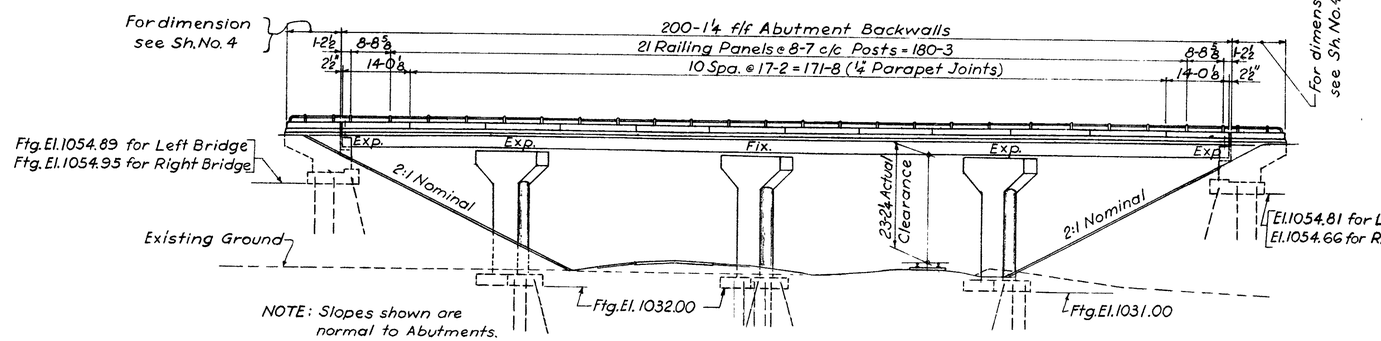
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVISED

FED. RD. DIVISION	STATE	PROJECT		182
2	OHIO			

MONTGOMERY COUNTY
MOT-40-2.73



PLAN



ELEVATION

NOTE: Slopes shown are normal to Abutments.

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55 revised 2-2-59, AR-1-57 revised 4-2-62 and CSB-2-56 Sheets 2 and 3 revised 2-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and piers.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

SHOP PAINTING STEEL. The surface preparation of all steel, requiring shop painting as per the Plans & Specifications, shall be accomplished by blast cleaning or power tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel & are located near the center of any span

SURFACE FINISH OF CONCRETE: The requirements of Sec. S-1.22, Rubbed Finish shall apply to the following exposed concrete surfaces:

a. The entire superstructure except the top & bottom surfaces of curbs & roadways.
b. The entire surface of piers & abutments except bridge seats, backwalls & the face of spill-through abutments between outside beams

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

SHEET LEAD shall conform to the requirements of ASTM Designation B29 without restriction to the Common Desilverized type.

UTILITY LINES: All expense involved in relocating (installing) the affected utility lines shall be borne by the owners. The contractor and Owners are requested to cooperate by arranging their work in such manner that inconvenience to either will be held to a minimum.

RAILROAD AERIAL LINES will be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

CONSTRUCTION CLEARANCE of 20-0 vertically above the top of the railroad rails and 8-0 horizontally from the center of tracks shall be maintained at all times.

SHEETING AND BRACING: Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the Railroad Company.

ESTIMATED QUANTITIES (TWO BRIDGES)

ITEM	TOTAL	UNIT	DESCRIPTION	Gen.	Super.	Piers	Abut.			
E-2	925	Cu.Yds.	Unclassified Excavation			432	493			
E-2	Lump	Sum	Cofferdams, cribs and sheeting	Lump						
I-127	2	Each	Delineators, Type B-1, Bracket Mounted	2						
S-1	540	Cu.Yds.	Class C concrete, superstructure		540					
S-1	418	Cu.Yds.	Class C concrete, piers above footings			418				
S-1	353	Cu.Yds.	Class E concrete, abutments				353			
S-1	113	Cu.Yds.	Class E concrete, pier footings			113				
S-18	6048	Lin.ft.	Steel piles. 10BP42			3500	2548			
S-4	221,941	Lbs.	Reinforcing steel		154,926	43,620	23,395			
S-7	427,300	Lbs.	Structural steel		427,300					
S-8	427,300	Lbs.	Field painting of structural steel		427,300					
S-14	901.75	Lin. Ft.	Railing Type A (aluminum rail & supports, concrete parapet)		901.75					
S-29	70	Cu.Yds.	Porous backfill				70			
S-29	16	Ea.	Scuppers		16					
I-10	1310	Sq.Yds.	Crushed aggregate slope protection	1310						
S-16	Lump	Sum	First test pile	Lump						
Special	540	Each	Water reducing, set retarding admixture *		540					

* See proposal note

CONTINUOUS BEAM SPLICES: If beams having depths differing by more than ⅛" are to be spliced by butt welding, the depth of the smaller-depth beam shall be increased by splitting the web longitudinally at a distance of 12" below the bottom of the top flange and for a distance sufficient to allow the flange to be bent up at a slope of not more than ⅜" per foot, after which the split in the web shall be completely welded with full depth penetration and ground flush.

BEAM WEB WELDS: Butt welds in webs of beams may have convex reinforcement in accordance with Sec. S-7.22. Finishing flush by grinding is not required.

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the Supervision of the Railroad Company, nothing in Sec. E-2.04, E-2.08 or G-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the abutment piles:
34 tons per pile using a 7000 ft. lb. hammer
25 tons per pile using an 11000 ft. lb. hammer
22 tons per pile using a 15000 ft. lb. or greater hammer.

For the pier piles:
47 tons per pile using an 11000 ft. lb. hammer
40 tons per pile using a 15000 ft. lb. or greater hammer.

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 16 tons per pile for abutment piles and 34.7 tons per pile for the pier piles.

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

GENERAL PLAN
BRIDGE NO. MOT-40-0296 L/R
I.R.-70 OVER PENN.-B.& O.R.R.

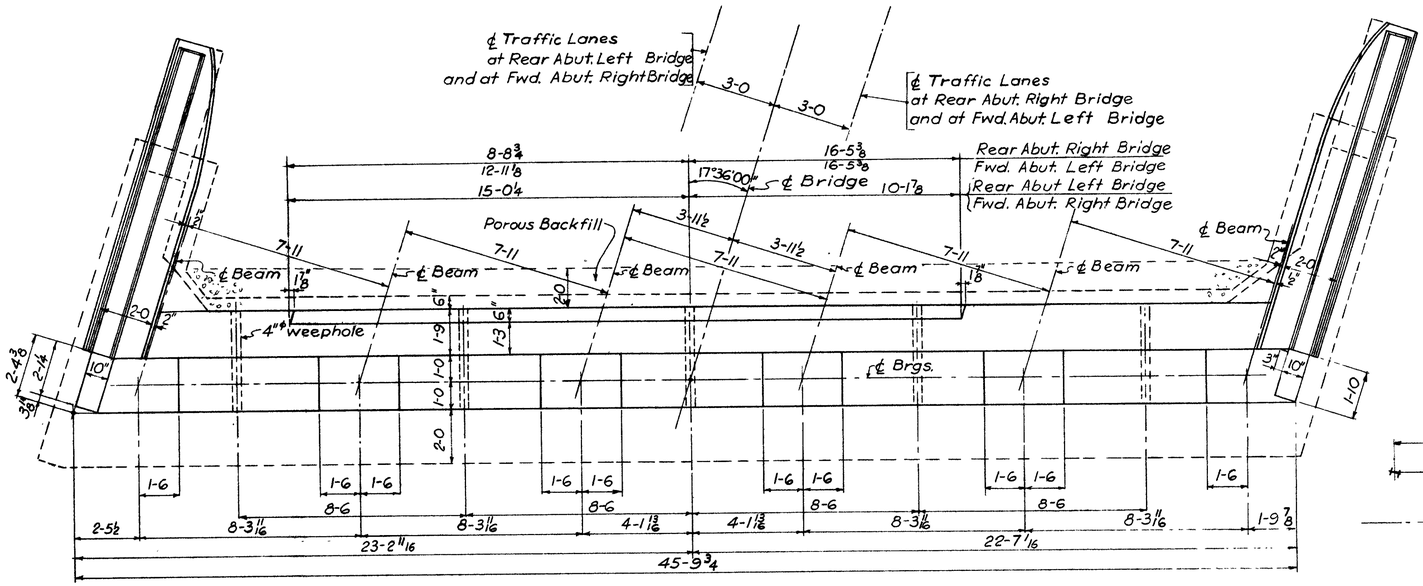
MONTGOMERY COUNTY I.R.-70
STA. 156+90.36

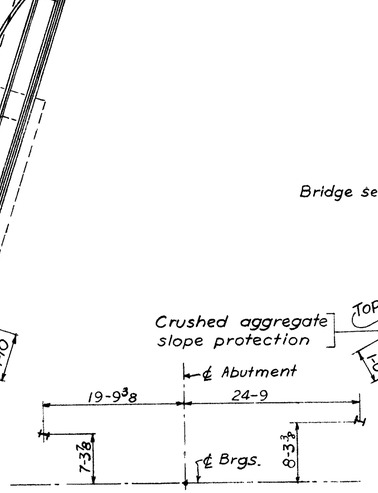
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B.		B.H.	KQ.	6-29-62	

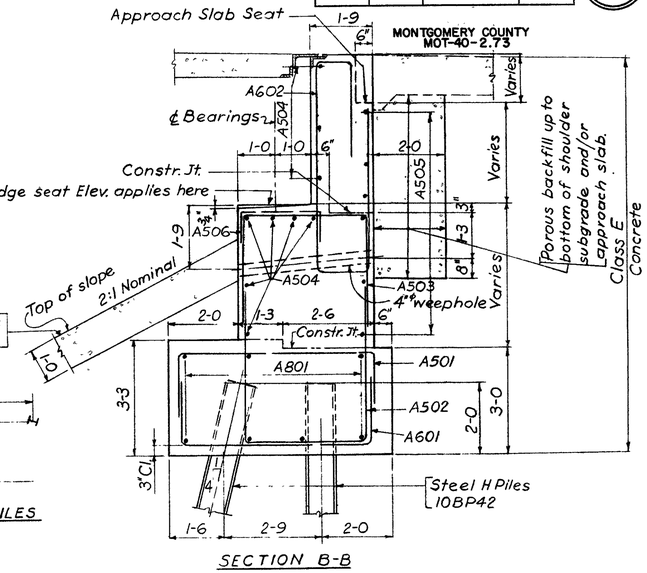
SHEET 3

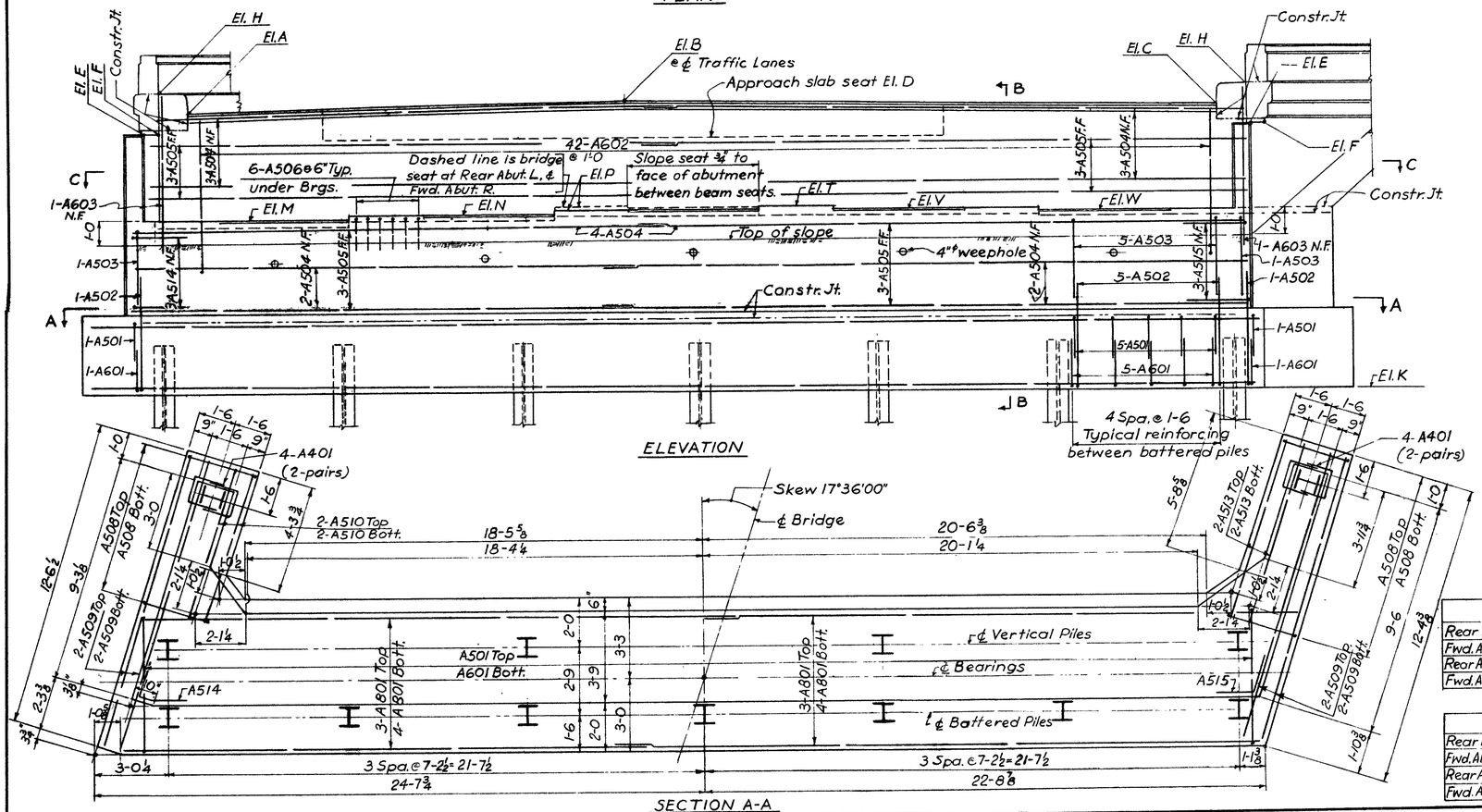
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

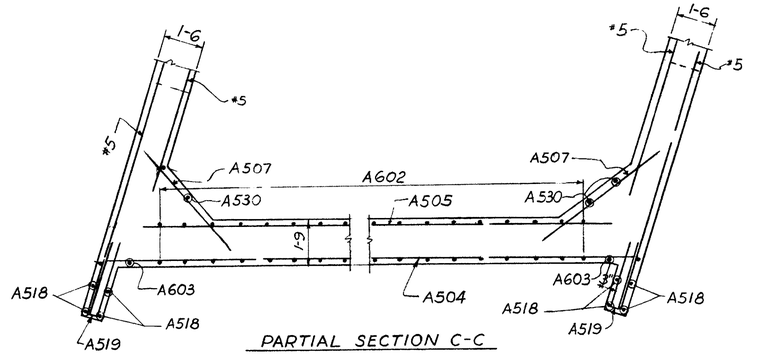
183











PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and for piers that are set in the filled area and the piles driven.

NOTES: 1. Excavation for porous backfill, in excess of that required for construction of the abutments, shall be considered as paid for in the bid price per cu. yd. for porous backfill.
2. For reinforcing steel details see sheet No. 187.
3. N.F. - indicates near face.
F.F. - indicates far face.
E.F. - indicates each face.
4. For Elevs E, F & H see sheet 184.

	El. A	El. B	El. C	El. D	El. K	El. M	El. N	El. P	El. T
Rear Abut. L.	1066.34	1066.60	1066.22	1065.07	1054.89	1062.02	1062.14	1062.26	1062.16
Fwd. Abut. L.	1066.15	1066.49	1066.21	1064.92	1054.81	1061.83	1061.95	1062.07	1062.15
Rear Abut. R.	1066.29	1066.64	1066.37	1065.11	1054.95	1061.97	1062.09	1062.21	1062.31
Fwd. Abut. R.	1066.13	1066.38	1065.99	1064.85	1054.66	1061.82	1061.93	1062.05	1061.95

	El. V	El. W
Rear Abut. L.	1062.04	1061.91
Fwd. Abut. L.	1062.02	1061.89
Rear Abut. R.	1062.18	1062.05
Fwd. Abut. R.	1061.81	1061.68

"L" indicates Left Bridge
"R" indicates Right Bridge

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

ABUTMENT DETAILS
BRIDGE NO. MOT-40-0296 L/R
I.R-70 OVER PENN.-B. & O. R.R.

MONTGOMERY COUNTY I.R-70
STA. 156+90.36

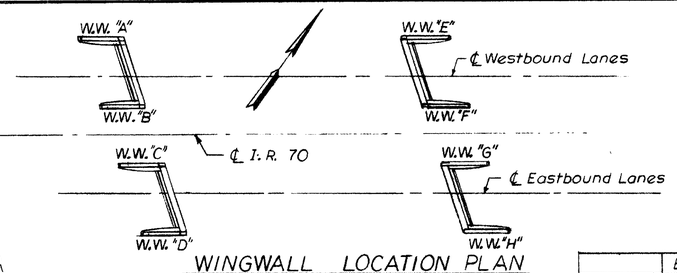
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	B.B.		B.H.	K.C.	6-28-62	

SH. No. 3

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

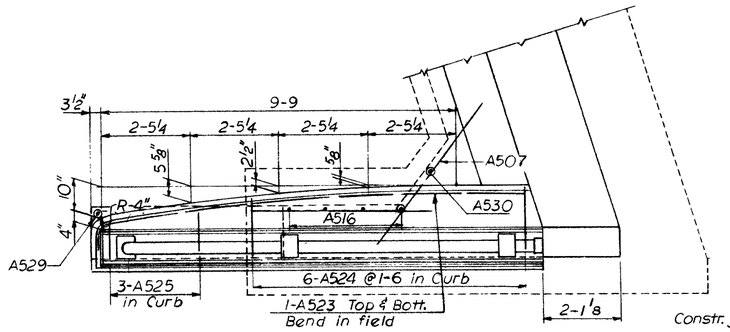
184

MONTGOMERY COUNTY
MOT-40-2.73

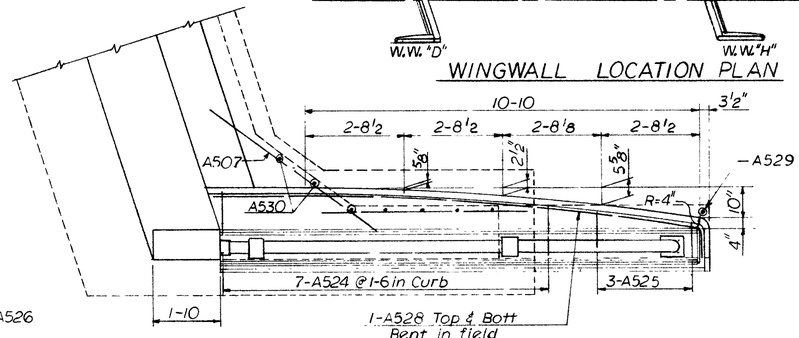


WINGWALL LOCATION PLAN

	El. K	El. X	El. E	El. F	El. H	El. J
W.W. "A"	1054.89	1061.91	1065.25	1065.25	1067.06	1067.04
W.W. "B"	1054.89	1062.02	1065.37	1065.37	1067.18	1067.16
W.W. "C"	1054.95	1062.05	1065.40	1065.40	1067.21	1067.20
W.W. "D"	1054.95	1061.97	1065.31	1065.31	1067.13	1067.12
W.W. "E"	1054.81	1061.83	1065.18	1065.17	1066.99	1066.95
W.W. "F"	1054.81	1061.89	1065.24	1065.23	1067.04	1067.00
W.W. "G"	1054.66	1061.82	1065.17	1065.16	1066.98	1066.93
W.W. "H"	1054.66	1061.68	1065.03	1065.02	1066.83	1066.78



PLAN



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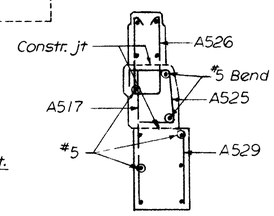
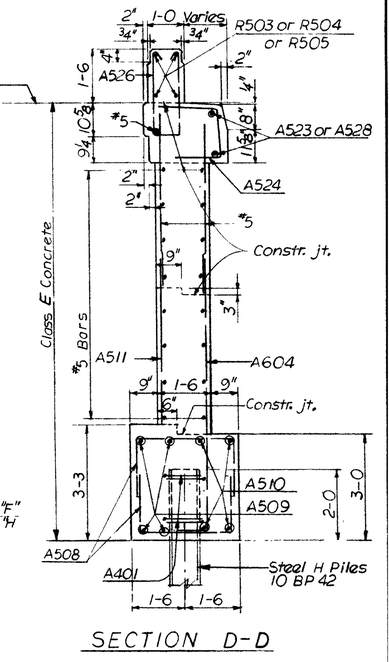
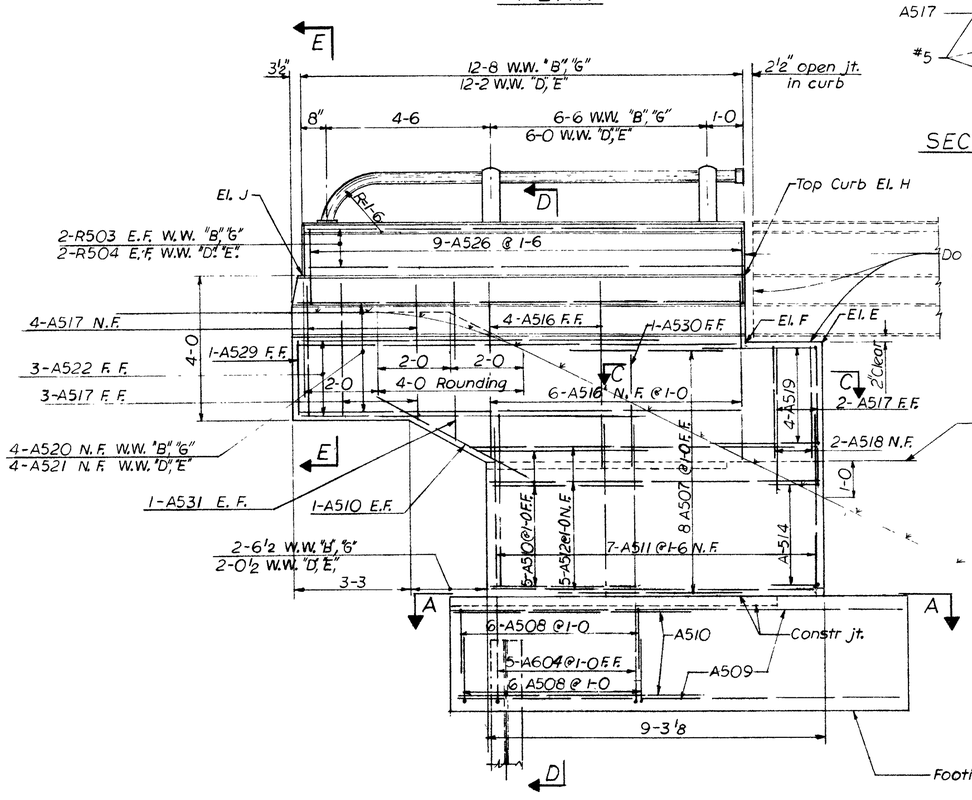


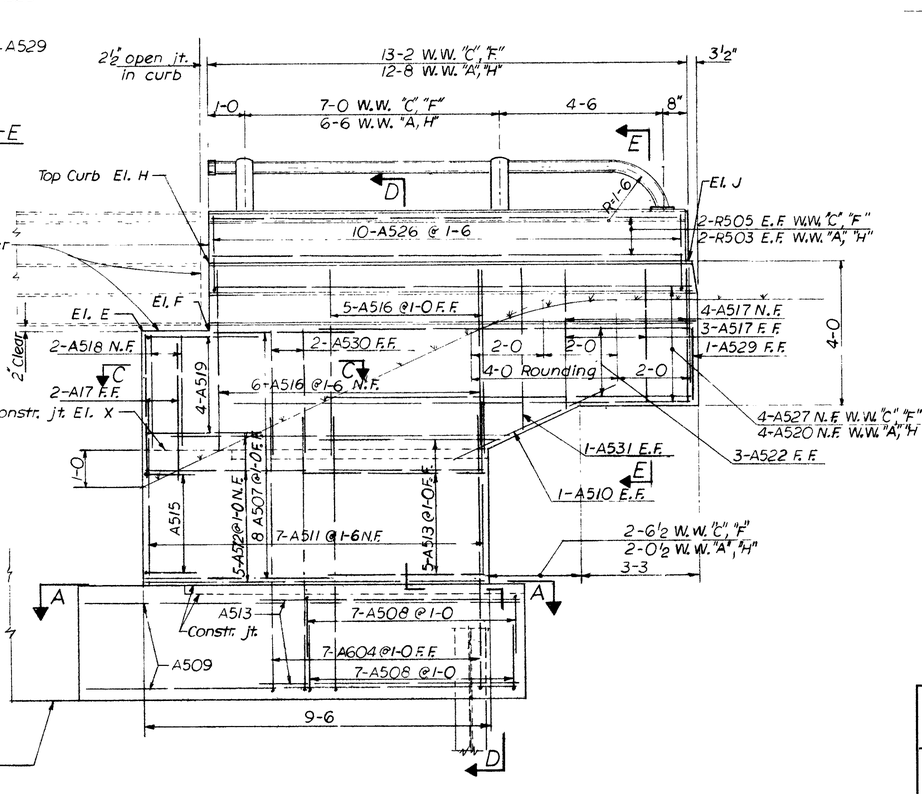
SECTION E-E



SECTION D-D



ELEVATION
WINGWALL "B", "D", "E" & "G"



ELEVATION
WINGWALL "A", "C", "F" & H.

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

WINGWALLS
BRIDGE NO. MOT-40-0296 L/R
I.R-70 OVER PENN.-B.& O. R.R.

MONTGOMERY COUNTY I.R-70
STA. 156+90.36

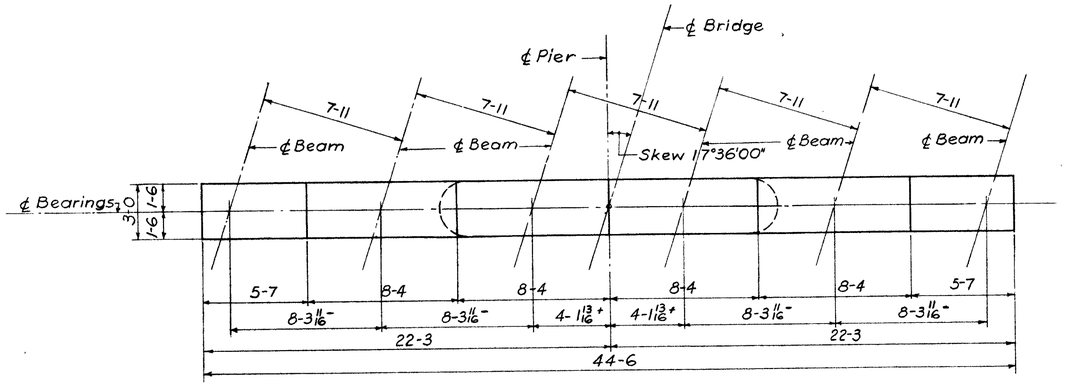
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V. B.		B.H.	K.A.	6-29-62	

SH. No. 4

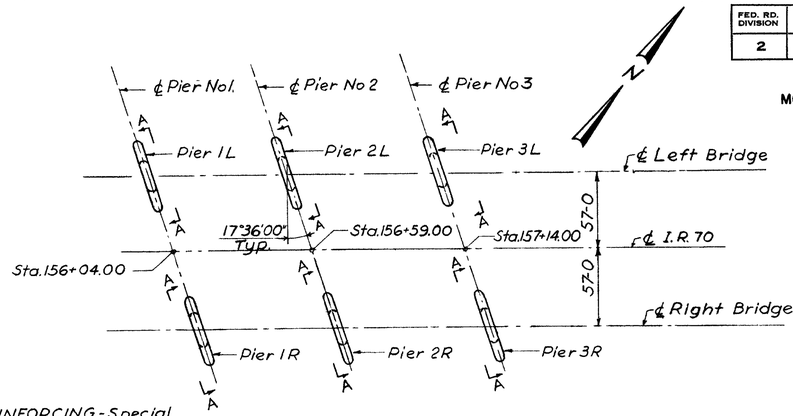
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MONTGOMERY COUNTY
MOT-40-2.73

185

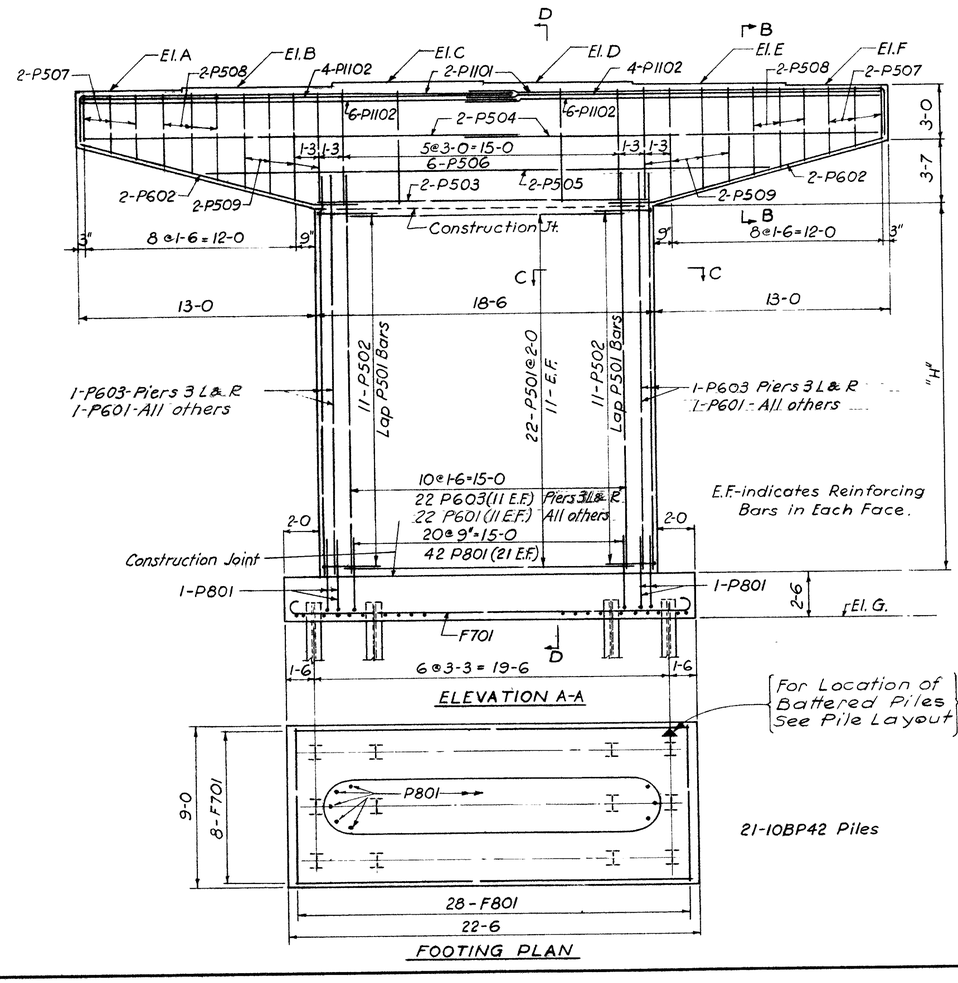


PLAN



NOTE: BRIDGE SEAT REINFORCING - Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat of Pier 2L & Pier 2R, so as to avoid interference with the drilling of anchor bar holes.

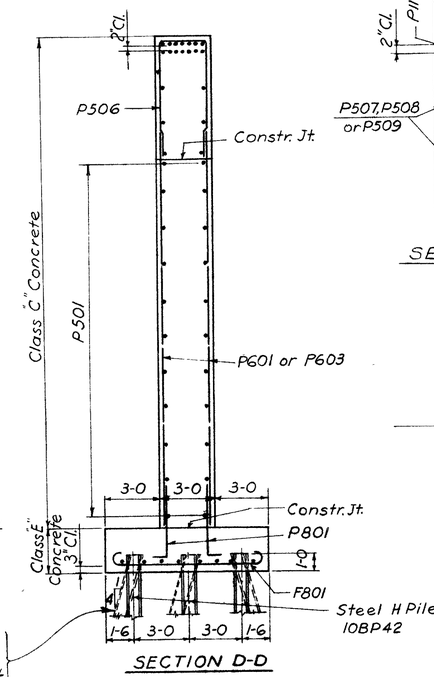
GENERAL PLAN of PIER



ELEVATION A-A

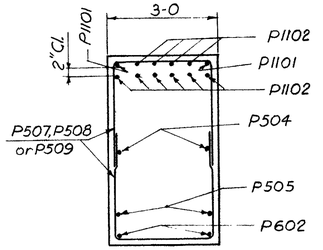
FOOTING PLAN

21-10BP42 Piles

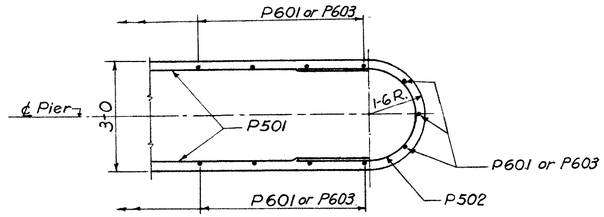


SECTION D-D

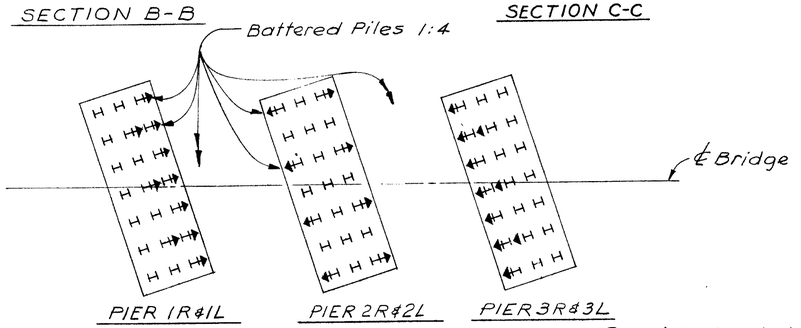
For Location of Battered Piles See Pile Layout



SECTION B-B



SECTION C-C



PILE LAYOUT

For reinforcing steel details see sheet No. 187.

Pier \ Elevation	A	B	C	D	E	F	G	Dimension "H"
Pier 1L	1061.72	1061.84	1061.96	1061.86	1061.74	1061.61	1032.00	20-6 3/8
Pier 2L	1061.71	1061.84	1061.96	1061.87	1061.75	1061.62	1032.00	20-6 1/2
Pier 3L	1061.64	1061.77	1061.90	1061.81	1061.69	1061.57	1031.00	21-5 3/8
Pier 1R	1061.72	1061.85	1061.97	1061.87	1061.75	1061.63	1032.00	20-6 5/8
Pier 2R	1061.69	1061.81	1061.93	1061.83	1061.71	1061.58	1032.00	20-6
Pier 3R	1061.59	1061.71	1061.83	1061.73	1061.60	1061.47	1031.00	21-4 5/8

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

PIER DETAILS

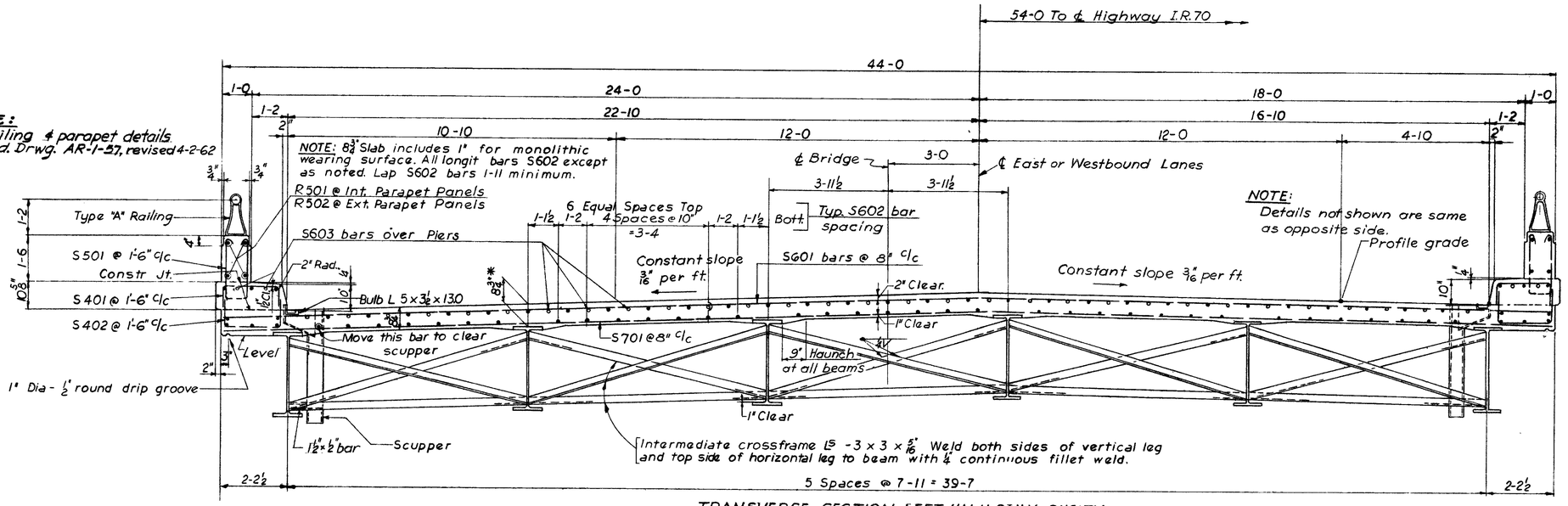
BRIDGE NO. MOT-40-0296 L/R
I.R-70 OVER PENN-B.& O.R.R.
MONTGOMERY COUNTY I.R-70
STA. 156+90.36

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	R
H.N.	B.B.		B.H.	K.O.	6-29-62	

SH. N

FED.RD DIVISION	STATE	PROJECT	
2	OHIO		

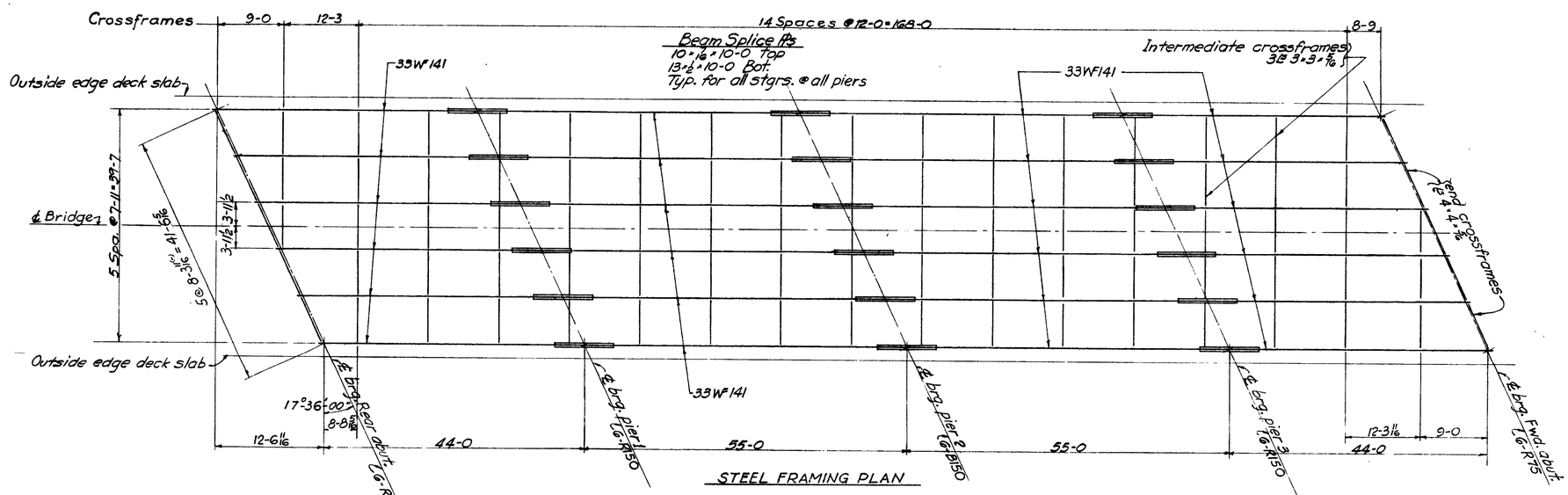
MONTGOMERY COUNTY
MOT-40-2.73



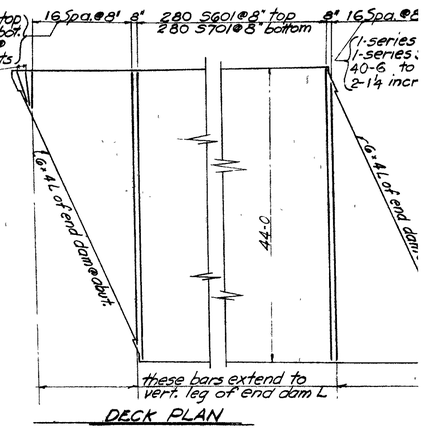
TRANSVERSE SECTION LEFT HALH ONLY SHOWN

NOTE:
* This is the nominal dimension. The of deck concrete to be paid for, sha based on this dimension, even thc deviation from it may be necessa because the top flange of the bec not have the exact camber or con tion required to place it parallel the finished grade.

DECK SLAB HAUNCH: The haunch in t slab adjacent to the top of steel be which is shown as 9" wide, may va this dimension between the limits and 12", except that the maximum shall not exceed 3 inches per foot. Payment for deck slab concrete be based on the 9" width.



STEEL FRAMING PLAN



DECK PLAN

DEFLECTION AND CAMBER

LOCATION	Outside Beams		Inside Beams	
	Spans 1#4	Spans 2#3	Spans 1#4	Spans 2#3
Deflection due to weight of steel	0	0	0	0
Deflection due to remaining dead load	1/8	1/4	1/8	1/4
Convexity required for vertical curv.	1/8	1/8	1/8	1/8
Sum of deflection & convexity	1/4	3/8	1/4	3/8
Required camber	0	0	0	0

BEAM SPLICE WELDING PROCEDURE

1. Raise end of beam at second pier ¾"
2. Butt weld beam flanges and web at first pier using the following sequence: make one pass on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates at first pier
4. Lower end of beam at second pier.
5. Make splice at the second and succeeding pier in the same manner raising the end of the beam ¾" at the third pier and 0" at the abutment.

REFERENCES:-
1.) For end crossframe details, end dam details, part plan @ abutments, sections and diagram showing stagger of S603 bars over piers, see Std. Drwg. CSB-2-56, sht. #2 of 6, revised 2-2-59.
2.) For beam splice details, gutter and scupper details and curb ℄ details see Std. Drwg. CSB-2-56 sht. #3 of 6, revised 2-2-59.
3.) For details of rockers and bolsters see Std. Drwg. RB-1-55, revised 2-2-59.

NOTE: For additional notes see sheet No. 182.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO ILLINOIS

SUPERSTRUCTURE DET
BRIDGE NO. MOT-40-0296
I.R-70 OVER PENN.-B.& O.

MONTGOMERY CO. I.R-70

STA. 156+90.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DAT
	B.B.		B.H.	W.A.	6-29-6

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

187

144

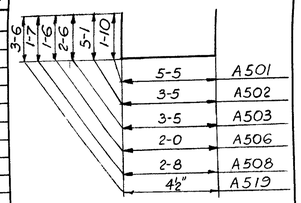
Ped

MONTGOMERY COUNTY
MOT-40-2.73

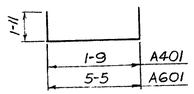
REINFORCING STEEL LIST

4 ABUTMENTS

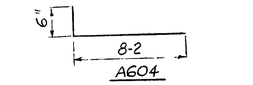
Mark	No. Req'd	Length	Type	Description	Weight
A801	56	24-9	S	Footing	3701
A601	128	8-11	B	Footing	1714
A602	168	15-8	B	Backwall	3953
A603	8	6-6	S	"	78
A604	48	8-6	B	Footing	612
A501	128	8-10	B	Footing	1179
A502	128	13-4	B	"	1780
A503	128	8-2	B	Stem	1090
A504	72	23-3	S	"	1746
A505	48	22-3	S	"	1114
A506	144	4-9	B	Bridge seat	713
A507	64	5-6	S	Stem	367
A508	104	5-7	B	Footing	606
A509	32	12-0	S	"	401
A510	52	5-10	S	Ftg. & Wingw.	316
A511	56	5-4	S	Wingwall	312
A512	40	8-11	S	"	372
A513	36	7-0	S	Ftg. & Wingw.	263
A514	12	4-6	B	Stem	56
A515	12	3-11	B	"	49
A516	84	4-10	S	Wingwalls	423
A517	72	3-8	S	"	275
A518	16	3-0	S	"	50
A519	32	7-2	B	"	239
A520	16	12-7	S	"	210
A521	8	12-1	S	"	101
A522	24	11-0	S	"	275
A523	8	13-0	S	Curb	108
A524	52	4-11	B	"	267
A525	24	3-11	B	"	98
A526	76	5-10	B	"	462
A527	8	13-1	S	Wingwall	109
A528	8	14-0	S	Curb	117
A529	8	2-0	S	Wingwall	17
A530	12	3-0	S	Stem	38
A531	16	4-3	S	Wingwall	71
A401	32	5-4	B	Footing	114
R503					
R504	See Superstructure Bar List				
R505					



A501, A502, A503, A506, A508 & A519



A401 & A601



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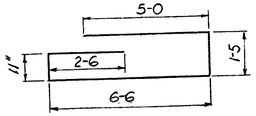

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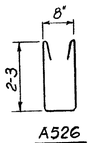

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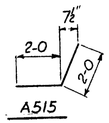

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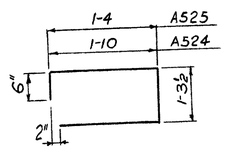
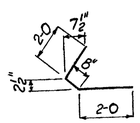


A524 & A525



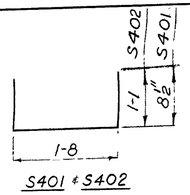
A514

REINFORCING STEEL LIST

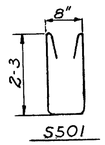
SUPERSTRUCTURE Left & Right Bridge

Mark	No. Req'd	Length	Type	Desc.	Weight
S601	560	43-8	S	Slab	36729
S602	960	34-9	S	"	50107
S603	204	22-0	S	"	6741
S604	4 series of 17	varies from 6-10 to 40-6	S	"	2417
S605	8	5-0	S	"	60
S401	532	2-10	B	Curb	1007
S402	532	3-7	B	"	1273
S501	532	5-10	B	Curb	3237
R501	160	16-10	S	Parapet	*
R502	32	13-8	S	"	*
R503	16	12-4	S	"	*
R504	8	11-10	S	"	*
R505	8	12-8	S	"	*
S701	560	43-8	S	Slab	49983
S702	8	5-0	S	"	82
S703	4 series of 17	varies from 6-10 to 40-6	S	"	3290

* to be included with railing for payment.



S401 & S402



S501

REINFORCING STEEL LIST

REPLACEMENT BARS

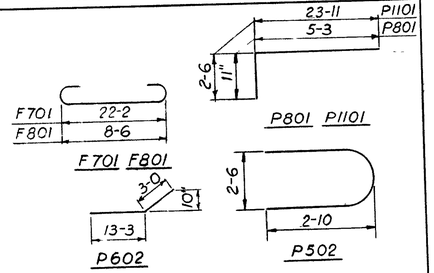
Mark	No. Req'd	Length	Type	Weight
RE401	1	5-3	S	
RE501	2	5-7	S	
RE601	6	5-11	S	
RE701	3	6-2	S	
RE801	1	6-6	S	
RE1101	1	7-6	S	

NOTE.
Bar size is indicated in the bar mark. The first digit where three digits are used and the first two digits where four digits are used, indicates the bar size number. For example, P501 is a No. 5 size bar and P1001 is a No. 10 size bar.

REINFORCING STEEL LIST

PIERS

Mark	No. Required	Length	Type	Weight
P501	132	15-6	S	2134
P502	132	7-1	B	975
P503	12	18-6	S	232
P504	24	22-8	S	567
P505	12	31-6	S	394
P506	36	15-3	B	572
P507	72	7-1	B	532
P508	72	8-5	B	632
P509	96	9-9	B	976
P601	112	22-6	S	3785
P602	24	16-3	B	586
P603	56	23-6	S	1977
P801	288	5-11	B	4550
P1101	24	26-2	B	3337
P1102	120	23-11	S	15248
F701	48	23-10	B	2338
F801	168	10-8	B	4785



P506, P507, P508 & P509

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

REINFORCING STEEL DETAILS
BRIDGE NO. MOT 40 0296 L/R
I.R.-70 OVER PENN.-B. & O. R.R.

MONTGOMERY COUNTY I.R.-70
STA. 156+90.36

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HN	H.N		B.H.	K.G.	6-21-61	

Sh. No. 7

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

188

MONTGOMERY COUNTY
MOT. 40-2.73

N

Gravel Drive

Existing Road

S.R. 311

Point of Critical Clearance "A"

Sta. 177+19.27 ℄ I.R. 70
Sta. 35+22.60 ℄ S.R. 311

Begin Approach Slab
Sta. 37+11.45

51' Right of Way (Typ.)
GENERAL TELEPHONE CO.

14'-0 Design Clearance
14'-0 Actual Clearance

Design Clearance 14'-0
Actual Clearance 14'-0

Skew 41°48'34"

45°11'26"

End Approach Slab
Sta. 33+33.75

Limits of crushed aggregate slope protection

Paved Shoulders

Pavement

℄ Westbound Lanes

℄ Eastbound Lanes

℄ I.R. 70

Gravel Drive

Black Top Drive

1¢ 7200 Volt distribution pole line (2-wires)
DAYTON POWER & LIGHT Co.

9 Sty. Brick Residence

Brick Garage

1/4"/ft

= Drive Rod Penetration Test
= Drive Sample Boring

Bridge Limits

Sta. 33+33.75 | 1048.69 | 1049.40 | 1049.99 | 1050.45 | 1050.79 | P.V.I. Sta. 34+60.00 El. 1063.09 L.V.C. = 1400' | 1051.00 | H.P. Sta. 35+60.00 El. 1051.09 k = 25×10⁵ | 1051.05 | 1050.89 | 1050.60 | Sta 37+11.45

+4% | -3%

Ftg. El 1036.36 | 2:1 Normal | 6:1 Normal | Ftg. El 1037.10

Design Clearance 16-6 ℄ Point A"
(Actual Clearance 16-4⅜)

Existing Ground

12"ø Cast-in-place reinf. Concrete Piles
The estimated average pay length of piles 28 ft.
(Typ. for both abutments)

Ftg. El. 1023.60 | Ftg. El. 1022.70 | Ftg. El. 1022.20

12"ø Cast-in-place reinf. Concrete Piles
The estimated average pay length of piles 22 ft.
(Typ. for all piers)

PROFILE on ℄ S.R. 311

32+00 | 33+00 | 34+00 | 35+00 | 36+00 | 37+00

1060 | 1050 | 1040 | 1030 | 1020 | 1010 | 1000

FOUNDATION SOUNDINGS:

Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division office.

PROPOSED STRUCTURE

Type: 4-span continuous steel girders with reinforced concrete deck and reinforced concrete substructure.
Spans: 76-6; 109-4; 109-4 & 76-6 c. to c. bearings.
Roadway: 30-0 with 2-3 safety curbs.
Load Frequency: C.F. = 130 (57)
Skew: 41°48'34" Rt Fwd.
Wearing Surface: ¾" Monolithic concrete.
Approach Slabs: A.S. -1-54 (25' Long)
Alignment: Tangent

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SITE PLAN

BRIDGE NO. MOT-40-0336
I.R.-70 UNDER S.R.-311
MONTGOMERY CO. I.R.-70
SEC. MOT-40-2.73 STA. 177+19.27
SCALE 1"=20'

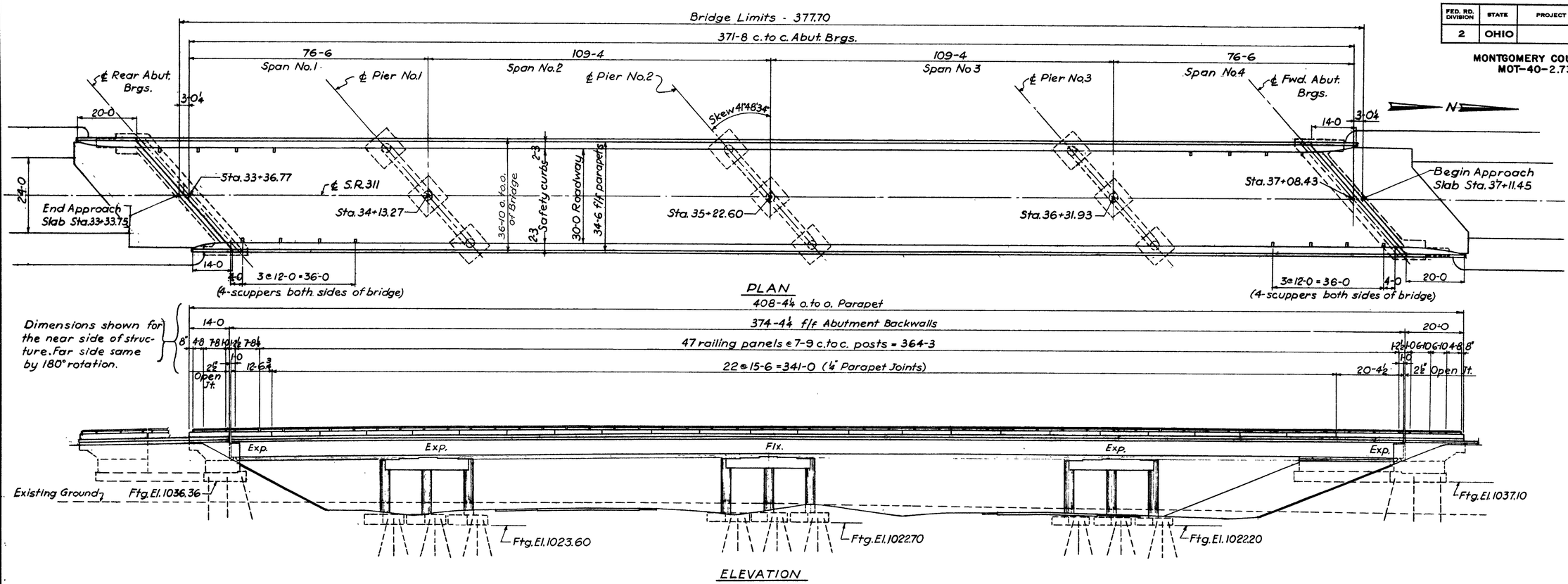
DESIGNED	DRAWN	CHECKED			
H.N.	B.B.	H.N.			LA 1/31/62

SH. No. 1

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

189

MONTGOMERY COUNTY
MOT-40-2.73



PLAN

Dimensions shown for the near side of structure. Far side same by 180° rotation.

408-4¼ o.to o. Parapet
374-4¼ f/f Abutment Backwalls
47 railing panels @ 7-9 c.to c. posts = 364-3
22 @ 15-6 = 341-0 (¼" Parapet Joints)

ELEVATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Gen.	Super.	Piers	Abut.
E-2	515	Cu.Yds.	Unclassified Excavation			213	302
S-1	360	Cu.Yds.	Class "C" concrete, superstructure		360		
S-1	94	Cu.Yds.	Class "C" concrete, piers above footings			94	
S-1	220	Cu.Yds.	Class "E" concrete, abutments				220
S-1	65	Cu.Yds.	Class "E" concrete, piers footings			65	
S-16	Lump	Sum	First test pile	Lump			
S-18	2470	Lin. ft.	12"ϕ Cast-in-place reinforced concrete piles			1630	840
S-4	146,983	Lbs.	Reinforcing steel		100,688	32,837	13,458
S-7	417,500	Lbs.	Structural steel		417,500		
S-8	417,500	Lbs.	Field painting of structural steel		417,500		
S-14	816.71	Lin. Ft.	Railing Type "A" (aluminum rail & supports, concrete parapet)		816.71		
S-29	43	Cu.Yds.	Porous backfill				43
S-29	16	Each	Scuppers		16		
I-10	716	Sq.Yds.	Crushed aggregate slope protection	716			
Special	360	Each	Water-reducing, set-retarding admixture *		360		

* See proposal note

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55 revised 2-2-59, AR-1-57 revised 4-2-62 and CSB-2-56 Sheets 2 and 3 revised 2-2-59, and to Supplemental Specification No. S-207.10 dated 4-25-61 & No. S-307, dated 8-23-60

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

SHOP PAINTING STEEL. The surface preparation of all steel, requiring shop painting as per the Plans & Specifications, shall be accomplished by blast cleaning or power tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel & are located near the center of any span.

SURFACE FINISH OF CONCRETE: The requirements of Sec. S-1.22, Rubbed Finish shall apply to the following exposed concrete surfaces:

a. The entire superstructure except the top & bottom surfaces of curbs & roadways.
b. The entire surface of piers & abutments except bridge seats, backwalls & the face of spill-through abutments between outside beams.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

SHEET LEAD shall conform to the requirements of ASTM Designation B29 without restriction to the Common Desilverized type.

UTILITY LINES: All expense involved in relocating (installing) the affected utility lines shall be borne by the owner(s) The contractor and Owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

PILES shall be driven to a minimum bearing capacity of 20 tons per pile for the abutments and 41 tons per pile for the piers.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

GENERAL PLAN

BRIDGE NO. MOT-40-0336
I.R.-70 UNDER S.R.-311

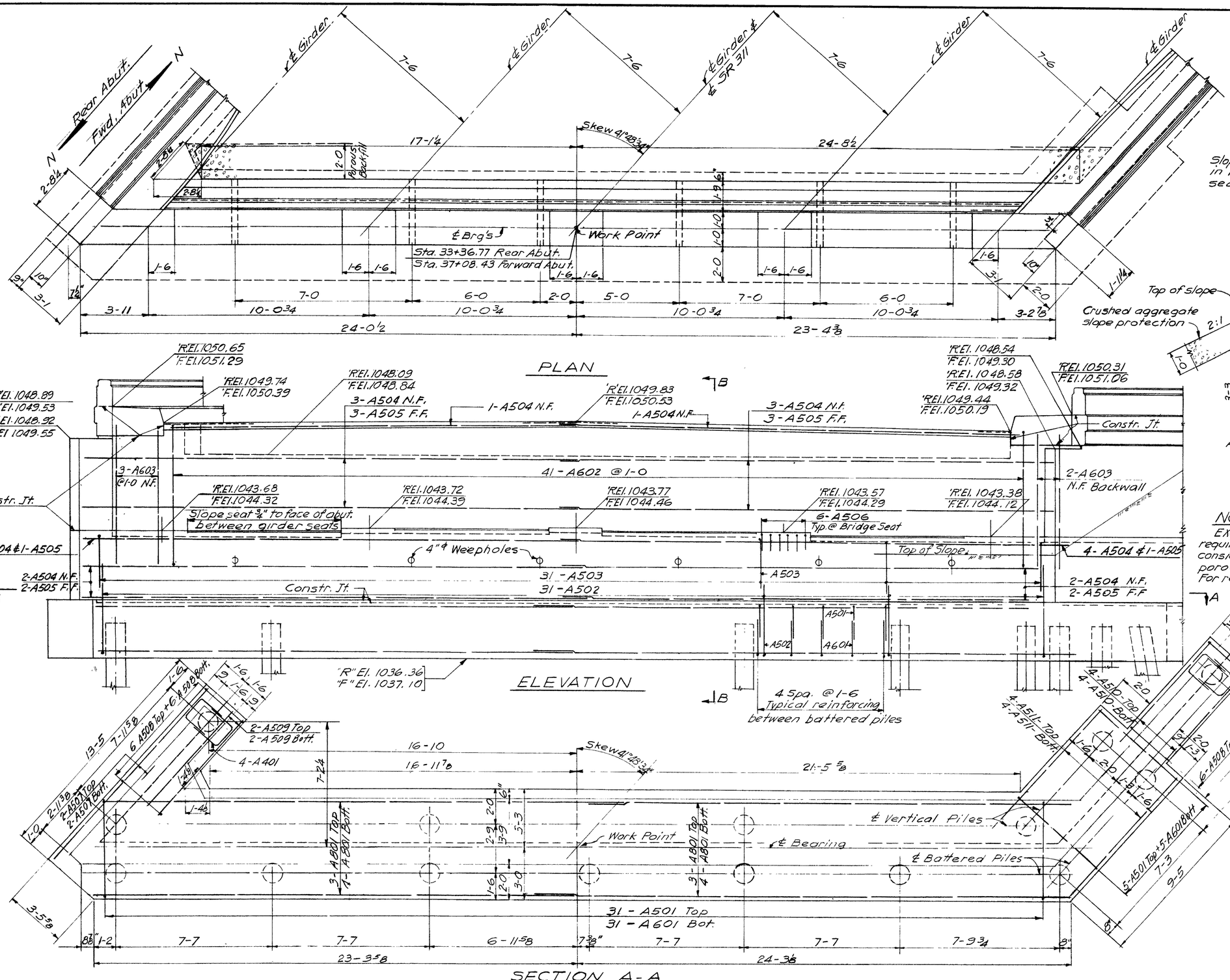
MONTGOMERY COUNTY — I.R.-70
STA. 177+19.27

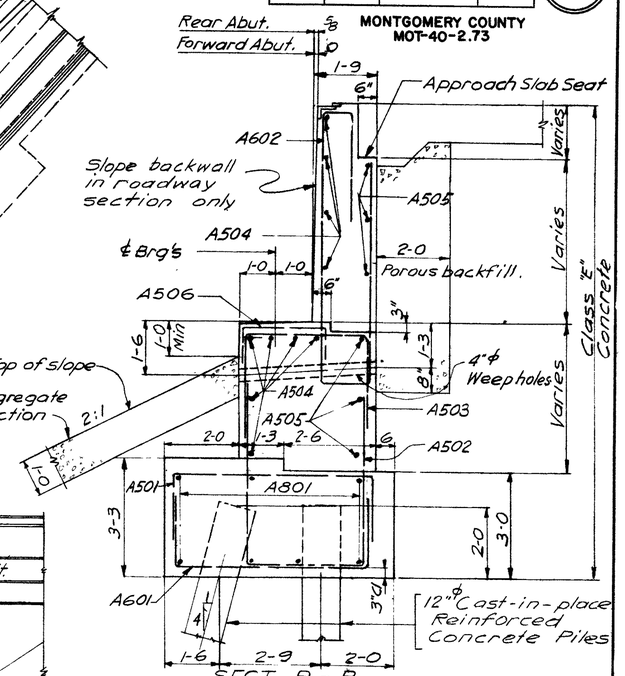
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	B.B.		B.H.	K.G.	6/25/62	

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

190

MONTGOMERY COUNTY
MOT-40-2.73





NOTES:

EXCAVATION for porous backfill, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per Cu. Yd for porous backfill.

For reinforcing steel details see sheet No. 195.

PROCEDURE:

The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment and the piles driven.

NOTES:

N.F. - indicates Near Face reinforcing
F.F. - indicates Far Face reinforcing
'R' El's refer to Rear Abutment
'F' El's refer to Forward Abutment

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

ABUTMENT DETAILS

BRIDGE NO. MOT-40-0336
I.R-70 UNDER S.R-311

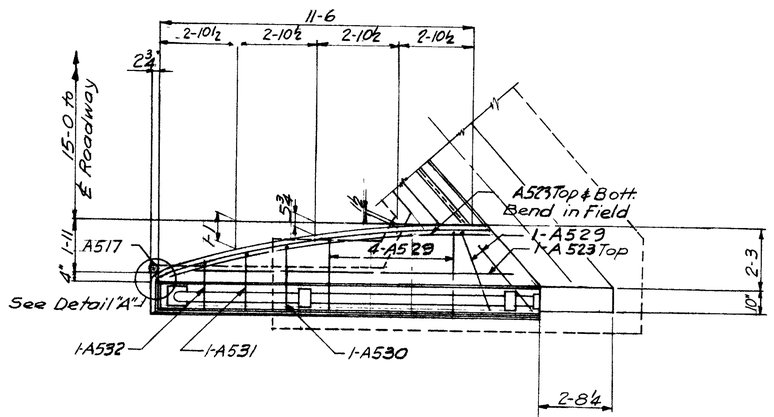
MONTGOMERY COUNTY — I.R.-70 STA. 177 + 19.27

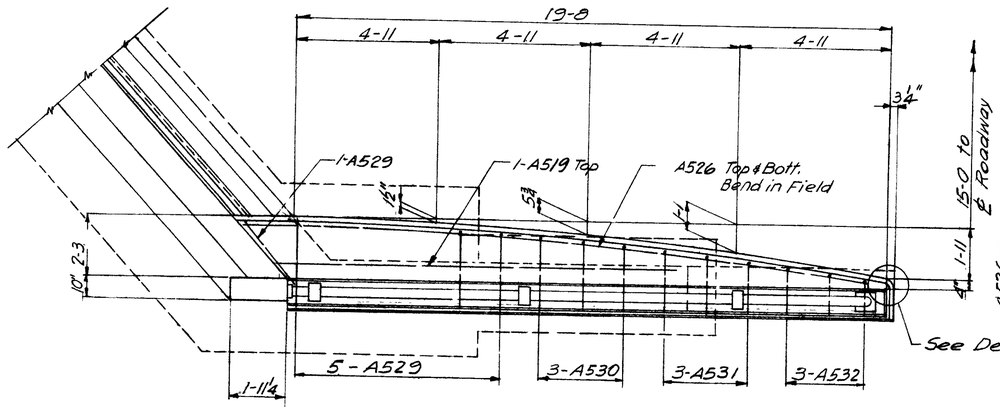
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S.		B.H.	K.G.	6-25-64	

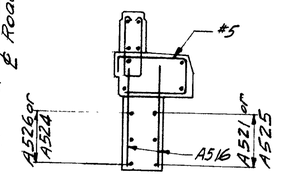
FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

191

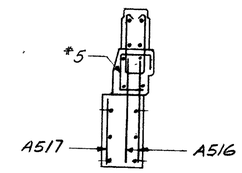
MONTGOMERY COUNTY
MOT-40-2.73



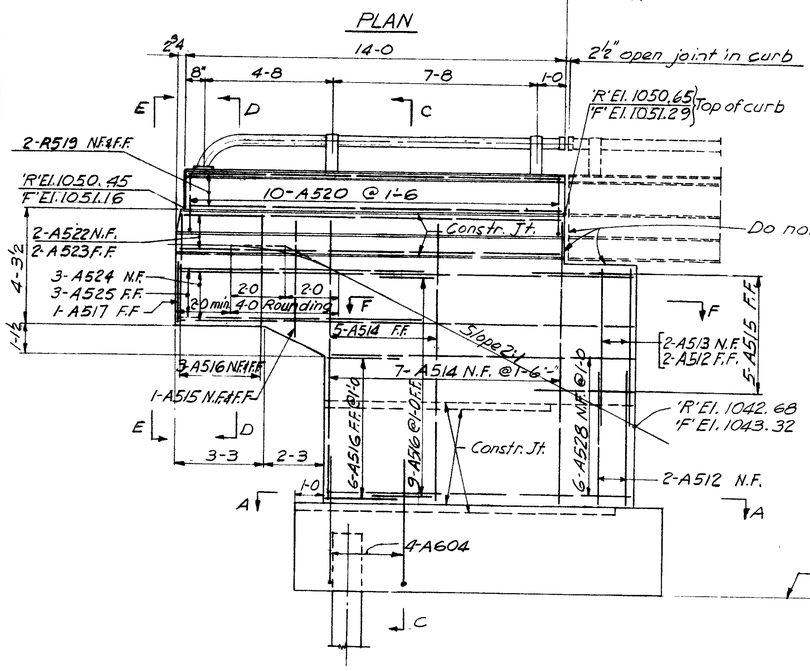




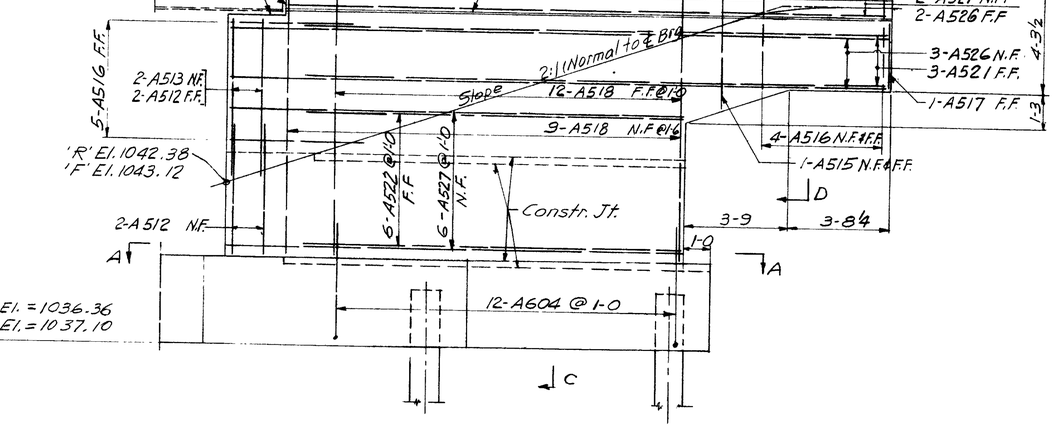
SECT. D-D



VIEW E-E

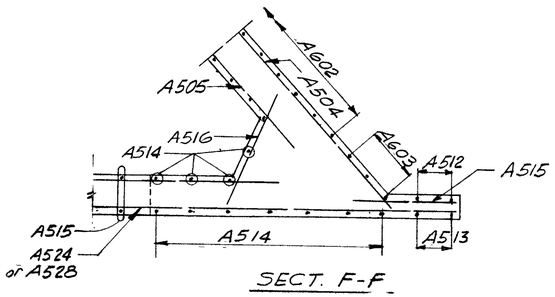


ELEVATION
RIGHT WING WALL - REAR ABUTMENT
LEFT WING WALL - FORWARD ABUT.

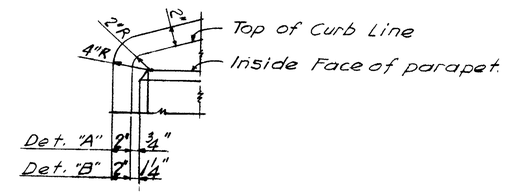


ELEVATION
LEFT WING WALL - REAR ABUTMENT
RIGHT WING WALL - FORWARD ABUT.

SECT C-C



SECT. F-F



DETAIL "A" As Shown
DETAIL "B" Opp. Hand

'R' El. = 1036.36
'F' El. = 1037.10

For Notes See Sh. No. 190.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

WINGWALLS

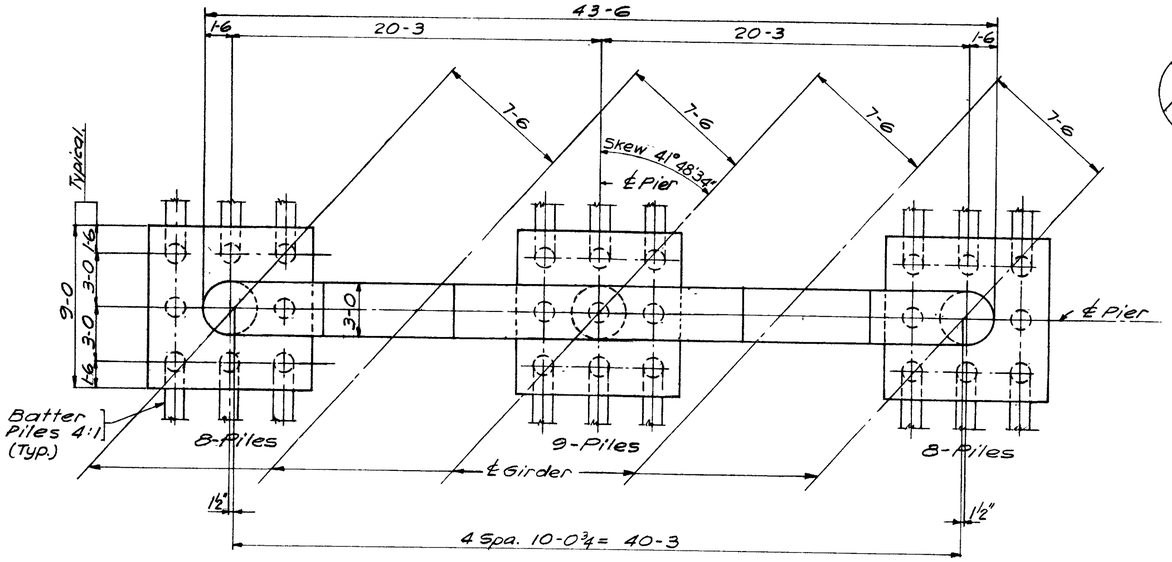
BRIDGE NO. MOT-40-0336
I.R-70 UNDER S.R.-311
MONTGOMERY COUNTY
I.R.-70
STA. 177+19.27

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N	H.S.		B.H.	K.G.	6/60	

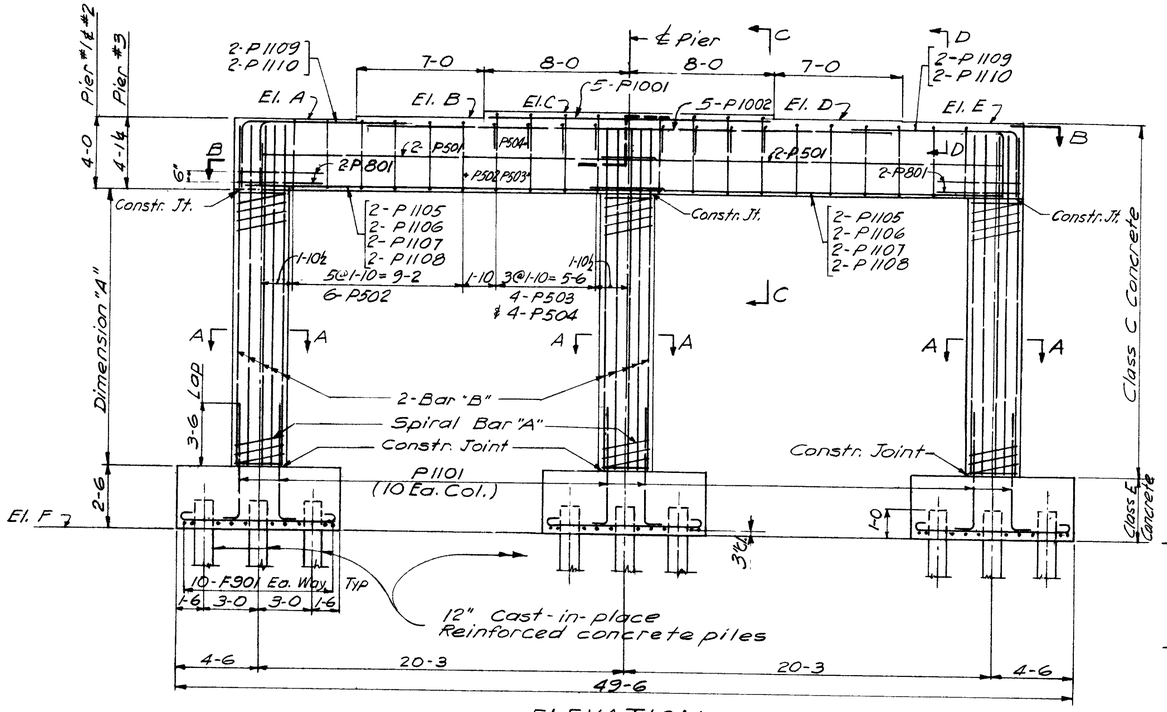
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

192

MONTGOMERY COUNTY
MOT-40-2.73

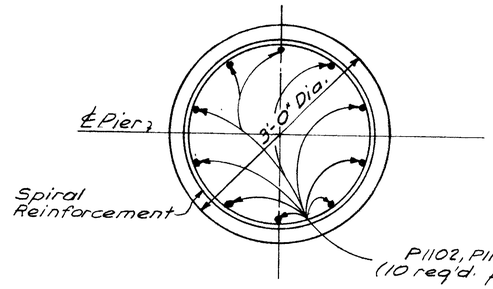


PLAN

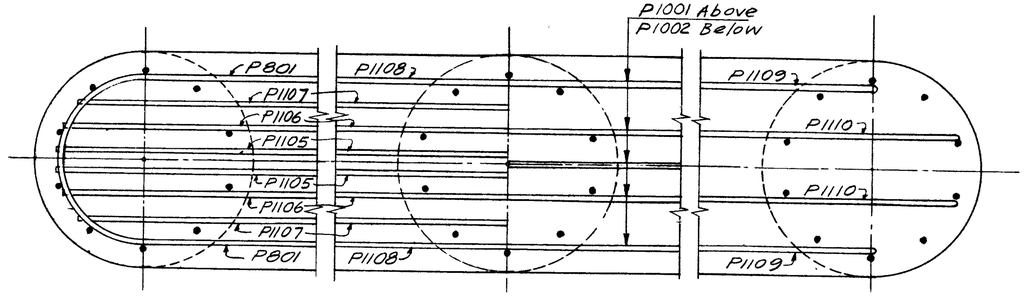


ELEVATION

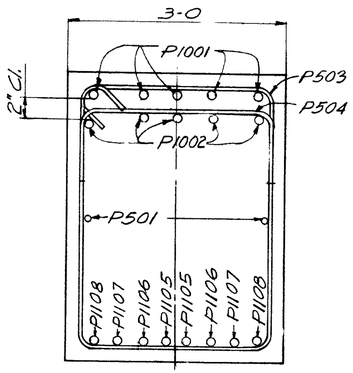
	ELEVATION						BAR		DIMENSION
	A	B	C	D	E	F	A	B	A
Pier No.1	1043.55	1043.72	1043.89	1043.82	1043.75	1023.60	SP401	P1102	13-5⅜
Pier No.2	1044.03	1044.16	1044.30	1044.19	1044.08	1022.70	SP402	P1103	14-10
Pier No.3	1044.10	1044.20	1044.29	1044.15	1044.01	1022.20	SP403	P1104	15-3½



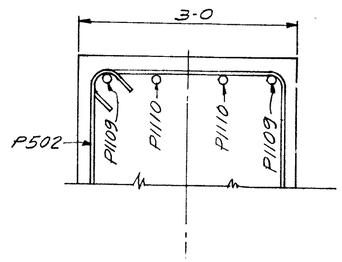
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

PIER NOTES:
Special Care shall be taken in placing reinforcing steel in the pier # 2 cap so that it will not interfere with the bearing plate anchor bolts.

Footings:- All footings of each pier are identical and all footing reinforcement shall have the same spacing in both directions, unless otherwise noted.

Symmetry: All pier details and reinforcement are symmetrical about the centerline of the pier, unless otherwise noted.

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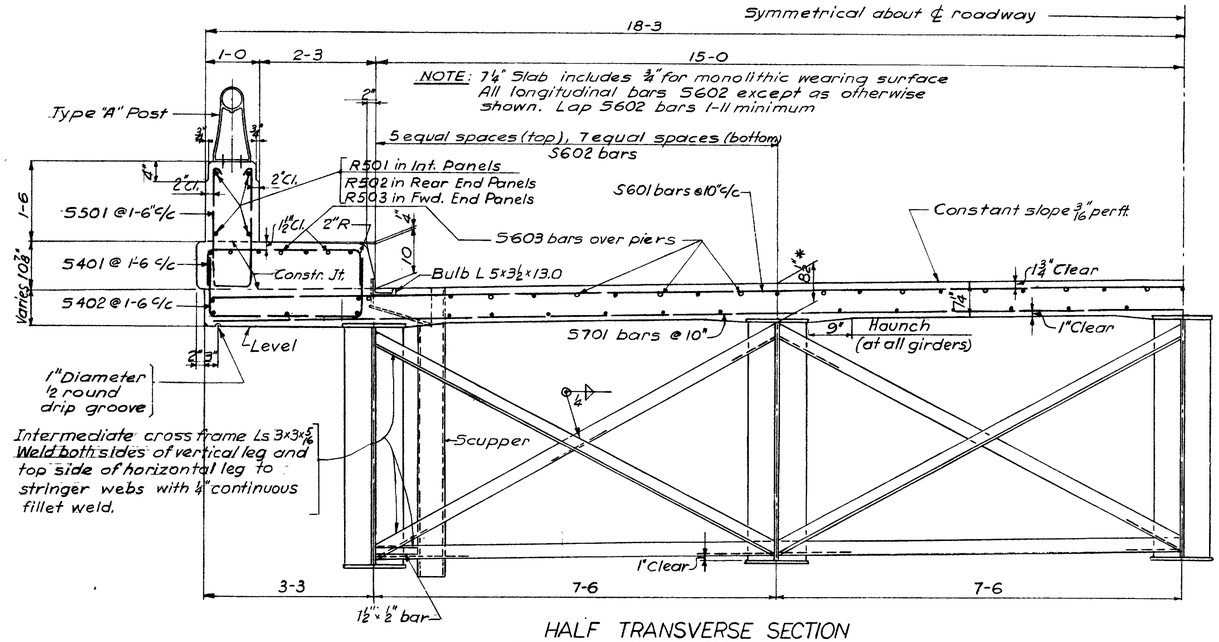
CHICAGO, ILLINOIS

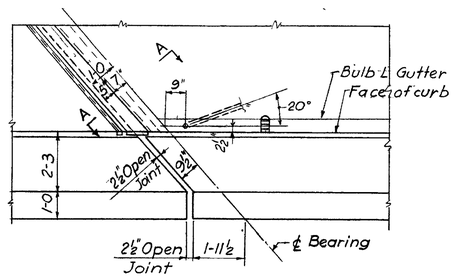
PIER DETAILS
BRIDGE NO. MOT-40-0336
I.R-70 UNDER S.R.-311

MONTGOMERY COUNTY IR-70
STA. 177 + 19.27

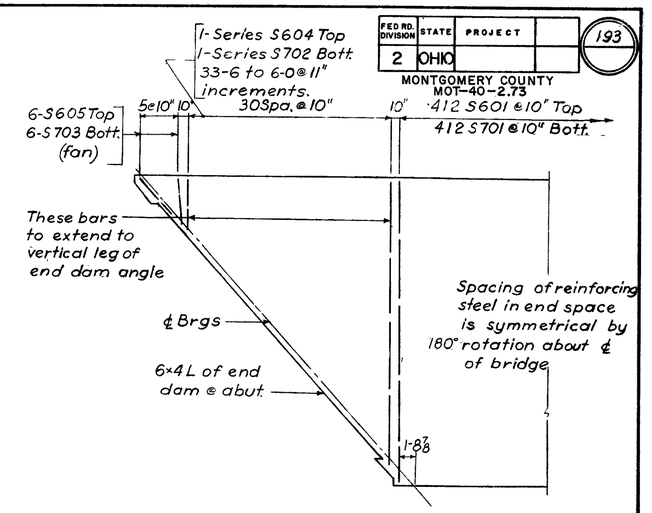
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S.		V.B.	K.A.	6-25-62	



HALF TRANSVERSE SECTION

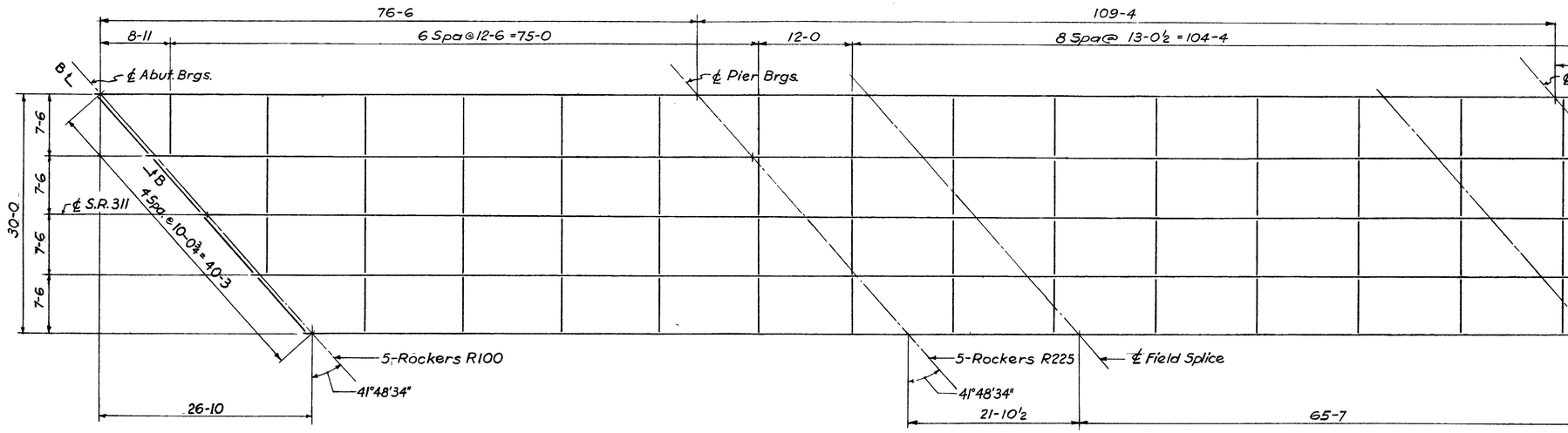


PART PLAN AT ABUTMENT

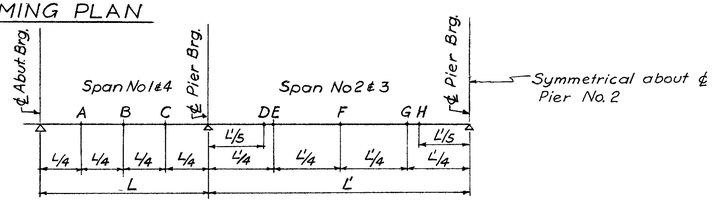


PLAN AT ABUTMENTS

NOTE*
This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of girder may not have the exact camber or conformation required to place it parallel to the finished grade.



STEEL FRAMING PLAN



POINT OF DEFLECTION DIAGRAM

DEFLECTION AND CAMBER

Location	Outside Girders								Inside Girders							
	Span No 1 & 4			Span No 2 & 3					Span No 1 & 4			Span No 2 & 3				
	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H
Deflection due to Weight of Steel	0	1⅝"	0	1⅝"	1⅝"	1⅝"	1⅝"	1⅝"	0	1"	0	1⅛"	1⅛"	1⅛"	1⅛"	1⅛"
Deflection due to Remaining Dead Load	½	5/8	¼	5/8	⅞	1⅜	¾	½	¼	¼	⅛	¼	⅜	5/8	⅜	¼
Convexity Required for Vertical Curve	⅜	½	⅜	5/8	5/8	⅞	5/8	5/8	⅜	½	⅜	5/8	5/8	⅞	5/8	5/8
Sum of Deflections and Convexity	⅞	1¼	5/8	1⅜	1⅝	2⅜	1½	1¼	5/8	⅞	½	1	1⅛	1⅝	1⅛	1
Required Camber		1¼				2⅜				⅞				1⅝		

ADDITIONAL NOTES: For additional notes see Sheet No. 189.

REFERENCES
For section A-A at abutment; end dam details, bridge roadway crown and diagram showing stagger of S603 bars over piers, see Std. Drwg. CSB-2-56, sh. #2 of 6, revised 2-2-59.
For gutter and scupper details and curb plate details see Std. Drwg. CSB-2-56 sh. #3 of 6, revised 2-2-59.
For details of rockers and bolsters see Std. Drwg. R.B.-1-55, revised 2-2-59.

Deck Slab Haunch:-
The haunch in the deck slab adjacent to the top of steel girders, which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12", except that the maximum slope shall not exceed 3" inches per foot. Payment for deck slab concrete shall be based on the 9" width.
For Section B-B see Sheet No. 194.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SUPERSTRUCTURE DETAILS

BRIDGE NO. MOT-40-0336
I.R.-70 UNDER S.R.-311
MONTGOMERY COUNTY I.R.-70
STA. 177+19.27

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S. & B.B.		B.H.	K.C.	6-25-62	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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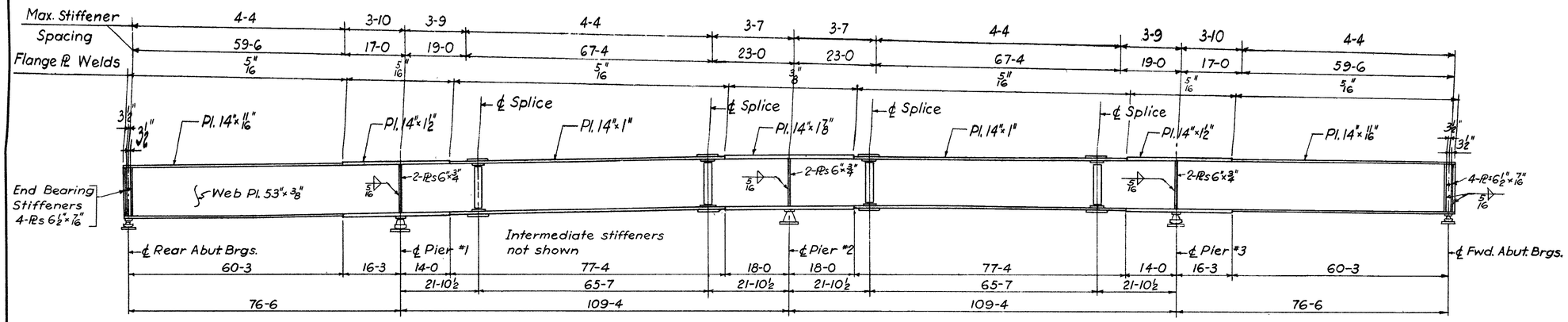
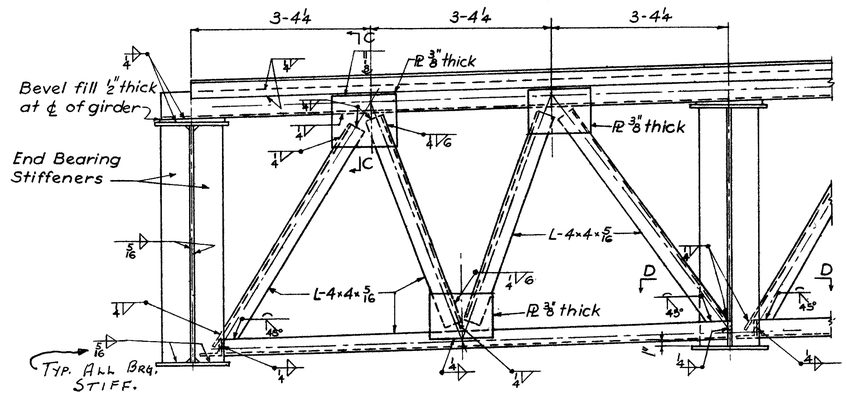
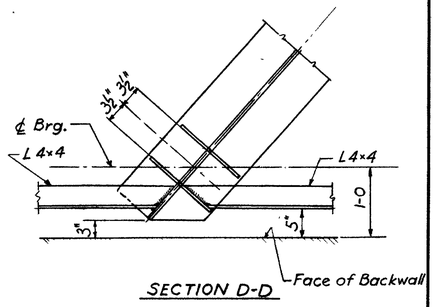
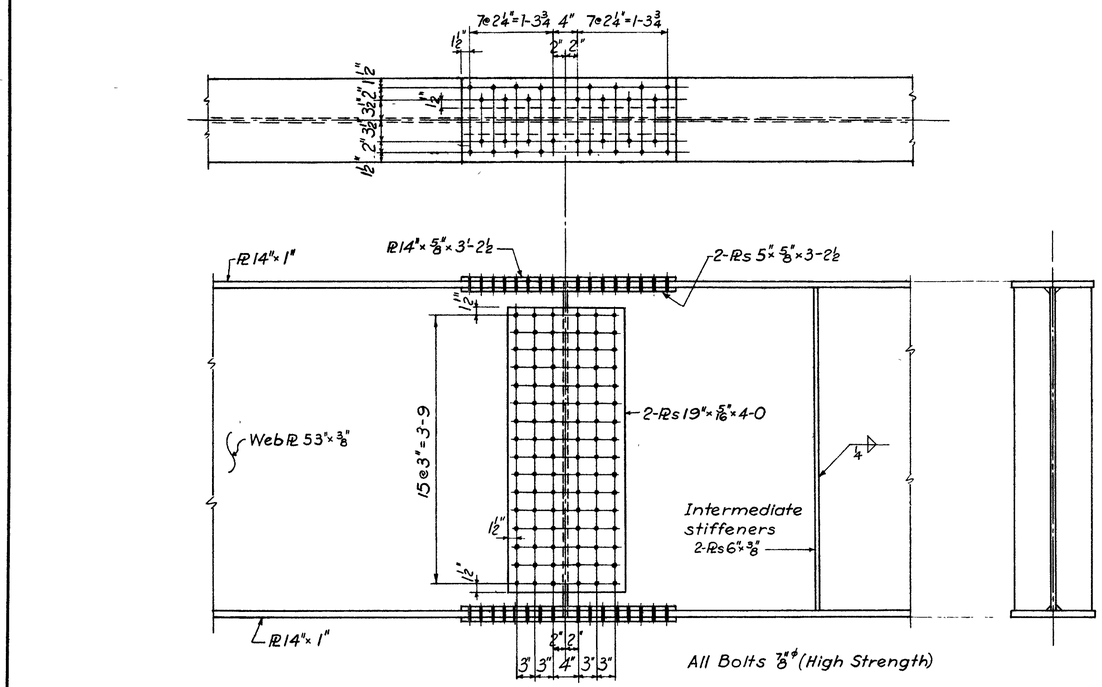
MONTGOMERY COUNTY
MOT-40-2.73



ELEVATION







DETAILS OF FIELD SPLICE AND INTERMEDIATE STIFFENERS

DETAIL OF FLANGE PLATE SPLICE

Note: All flange butt-welds shall be ground flush.

NOTES:

HIGH STRENGTH STEEL BOLTS: see Supplemental Specification No. S-207.10, dated 4-25-61.

All butt welds shall receive radiographic examination, according to Supplemental Specification No. S-307, dated 8-23-60.

SHOP SPLICES: If additional shop splices are necessary, their location and detail shall be submitted to the Director for approval prior to ordering of material.

ERECTION PROCEDURE: Contractor shall provide to the Director for approval 3 prints showing his proposed erection procedure for the plate girders.

SOLE PLATES for the rear abutment rockers shall be beveled to follow the roadway gradient. Plates shall be 2½" thick at ℄ rocker.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SUPERSTRUCTURE DETAILS

BRIDGE NO. MOT-40-0336
I.R-70 UNDER S.R.-311

MONTGOMERY COUNTY I.R-70
STA. 177+19.27

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N. & A.M.	B.B.		B.H.	K.C.	6-25-62	

SH. No. 7

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

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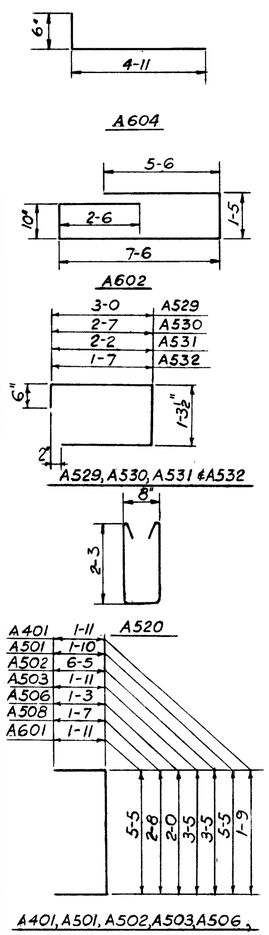
MONTGOMERY COUNTY
MOT-40-2.73

REINFORCING STEEL LIST

ABUTMENTS

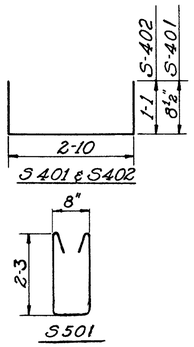
Mark	No. Req'd	Length	Type	Description	Weight
A801	28	25-0	S	Footing	1869
A601	72	8-11	B	Footing	964
A602	82	17-1	B	Backwall	2104
A603	10	7-6	S	"	113
A604	32	5-3	B	Footing	252
A501	72	8-10	B	Footing	663
A502	62	16-0	B	" "	1035
A503	62	7-0	B	Abutment	453
A504	40	23-11	S	"	998
A505	24	22-6	S	"	563
A506	60	4-3	B	"	266
A507	8	13-1	S	Footing	109
A508	48	5-7	B	"	280
A509	8	7-0	S	"	58
A510	16	8-1	S	"	135
A511	16	9-2	S	"	153
A512	16	5-2	S	Wingwalls	86
A513	8	5-0	S	"	42
A514	24	10-9	S	"	269
A515	18	4-6	S	"	84
A516	68	3-11	S	"	278
A517	4	2-4	S	"	10
A518	42	10-2	S	"	445
A519	2	13-6	S	"	28
A520	48	5-9	B	"	288
A521	10	19-8	S	"	525
A522	16	13-9	S	"	229
A523	6	12-0	S	"	75
A524	6	16-7	S	"	104
A525	6	9-6	S	"	59
A526	10	21-10	S	"	228
A527	12	14-5	S	"	180
A528	12	11-0	S	"	138
A529	24	7-3	B	"	181
A530	8	6-5	B	"	54
A531	8	5-7	B	"	47
A532	8	4-5	B	"	37
A401	16	5-4	B	Footing	57
R519				Parapet	see superstructure bar list
R521				"	



REINFORCING STEEL LIST

SUPERSTRUCTURE

Mark	No. Req'd	Length	Type	Desc.	Weight
S601	412	36-2	S	Slab	22381
S602	610	35-7	S	"	32602
S603	78	40-0	S	"	4686
S604	2 series of 31	6-0 to 33-6	S	"	1839
S605	12	6-0	S	"	108
S501	500	5-10	B	Curb	3042
S401	500	4-0	B	Curb	1336
S402	500	4-9	B	"	1587
R501	176	15-2	S	Parapet	*
R502	8	12-3	S	"	*
R503	8	20-0	S	"	*
R519	8	13-8	S	"	*
R521	8	19-8	S	"	*
S701	412	36-2	S	Slab	30457
S702	2 series of 31	6-0 to 33-6	S	"	2503
S703	12	6-0	S	"	147

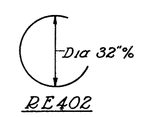


* to be included with railing for payment.

REINFORCING STEEL LIST

REPLACEMENT BARS

Mark	No. Req'd	Length	Type	Weight
RE401	1	4-9	B	
* RE402	1	5-3	B	
RE501	1	5-7	S	
RE601	4	5-11	S	
RE701	2	6-2	S	
RE801	1	6-6	B	
RE1001	1	7-2	S	
RE1101	1	7-6	S	

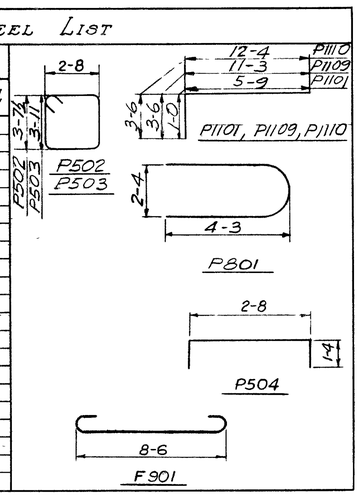


* Replacement for spiral reinforcing bar shall not have deformations but shall in other respects conform to Item S-4.

REINFORCING STEEL LIST

PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Length	Type	Weight
P501	4	4	4	21-0	S	263
P502	12	12	12	13-3	B	498
P503	8	8	8	13-10	B	346
P504	8	8	8	5-1	B	127
P801	4	4	4	9-10	B	315
P1101	30	30	30	6-6	B	3107
P1102	30			16-11	S	2696
P1103		30		18-4	S	2922
P1104			30	18-9	S	2989
P1105	4	4	4	23-3	S	1482
P1106	4	4	4	23-2	S	1477
P1107	4	4	4	23-0	S	1466
P1108	4	4	4	22-1	S	1408
P1109	4	4	4	14-6	B	924
P1110	4	4	4	15-7	B	994
P1001	5	5	5	15-10	S	1022
P1002	5	5	5	25-3	S	1630
F901	60	60	60	11-0	B	6732



SPIRAL REINFORCING STEEL LIST FOR PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Core Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	3			32"	13-5	4½"	39	755
SP402		3		32"	14-10	4½"	43	832
SP403			3	32"	15-3	4½"	44	852

* Replacement for spiral reinforcing bar shall not have deformations but shall in other respects conform to Item S-4.

NOTE:

Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used, indicate the bar size number. For example, P501 is a No. 5 size bar and P1101 is a No. 11 size bar.

SPIRAL REINFORCING BARS

The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No of Turns" shown in the steel list for the spiral bars is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

REINFORCING STEEL DETAILS

BRIDGE NO. MOT-40-0336
I.R-70 UNDER S.R-311
MONTGOMERY COUNTY — I.R-70 STA. 177 + 19.27

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	B.B.		B.H.	K.G.	6-25-62	

Sh No. 8

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO	I-70-1(15)20		

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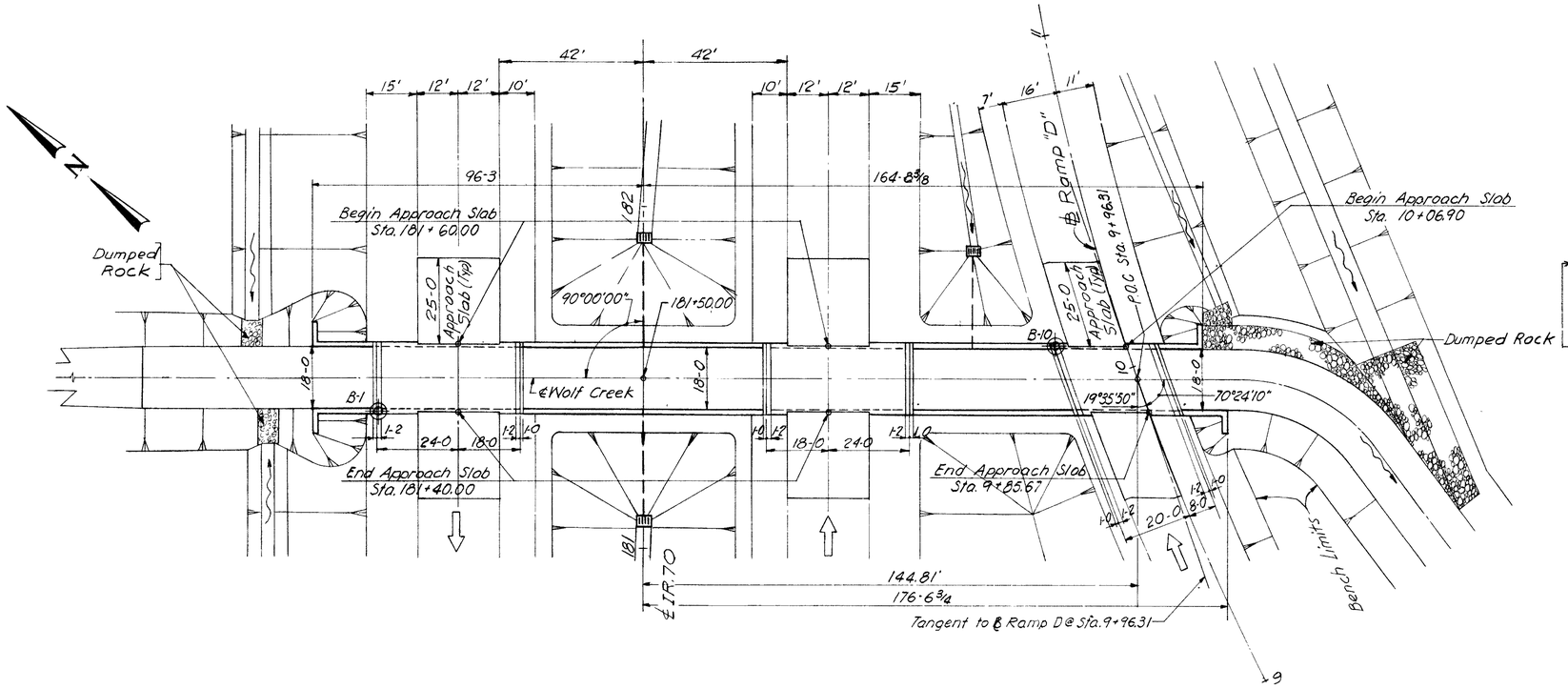
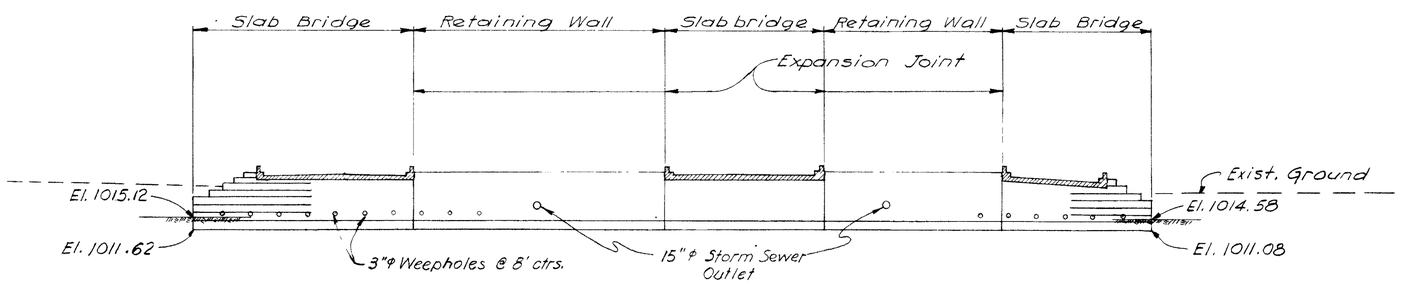
MONTGOMERY COUNTY
MOT-40-2.73



PLAN
Scale : 1"=20'-0"



LONGITUDINAL SECTION
Scale : 1"= 20'-0

ESTIMATED QUANTITIES ~ DRAINAGE CONTINUED

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	SUBST.
E-2	770	Cu.Yd.	Unclassified excavation		770
S-1	125	Cu.Yd.	Class "C" concrete, Superstructure	125	
S-1	500	Cu.Yd.	Class "E" concrete, Abutm.& Retaining walls	500	
S-1	305	Cu.Yd.	Class "E" concrete, Footings		305
S-3	160	Lin.Ft.	Waterproofing, premolded sealing strip		160
S-4	56980	Lb.	Reinforcing steel	25,505	31,475
S-9	93	Sq.Ft.	½" Preformed expansion joint filler		93
~~S-3~~	~~174~~	~~Sq.Ft.~~	~~1" Thick sealing strip~~		~~174~~
S-14	127.84	Lin.Ft.	Railing Type "A" (Aluminum rail and supports, concrete parapet)	127.84	
S-29	328	Cu.Yd.	Porous backfill		328
Special	129	Each	Water-reducing, set-retarding admixture*	129	
S-9	174	Sq.Ft.	1" Preformed expansion joint filler		174

* See proposal note

DRAINAGE AREA = 5.8 SQ. MI.
Q_{50} = 1064 CU FT/SEC.

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of soil-sampling soundings made at the site. This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division Office.

⊕ indicates press-drive sample – core boring

GENERAL NOTES:
REFERENCE shall be made to Standard Drawings SB-1-47, revised 1-20-48, and AR-1-57, revised 4-2-62.

STRUCTURE NO. MOT-40-0344
PROPOSED STRUCTURES

Type: 1-Span reinforced concrete slab bridges.
Span: 18-0 for I.R.70 Left and Right
19-1¼ for Ramp D
Roadway: 42-0 f. to f. concrete parapets for I.R.70 Left and Right
28-1¾ f. to f. concrete parapets for Ramp D
Loading: S-20-46
Skew: 0°00'00" for I.R.70 Left and Right
19°35'50" L.F. for Ramp D
Wearing Surface: 1" Monolithic Concrete
Approach Slabs: AS-1-54 (25' Long)
Alignment: Tangent

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

GENERAL PLAN

BRIDGE NO. MOT-40-0344

I.R.-70 OVER WOLF CREEK-NORTH BRANCH

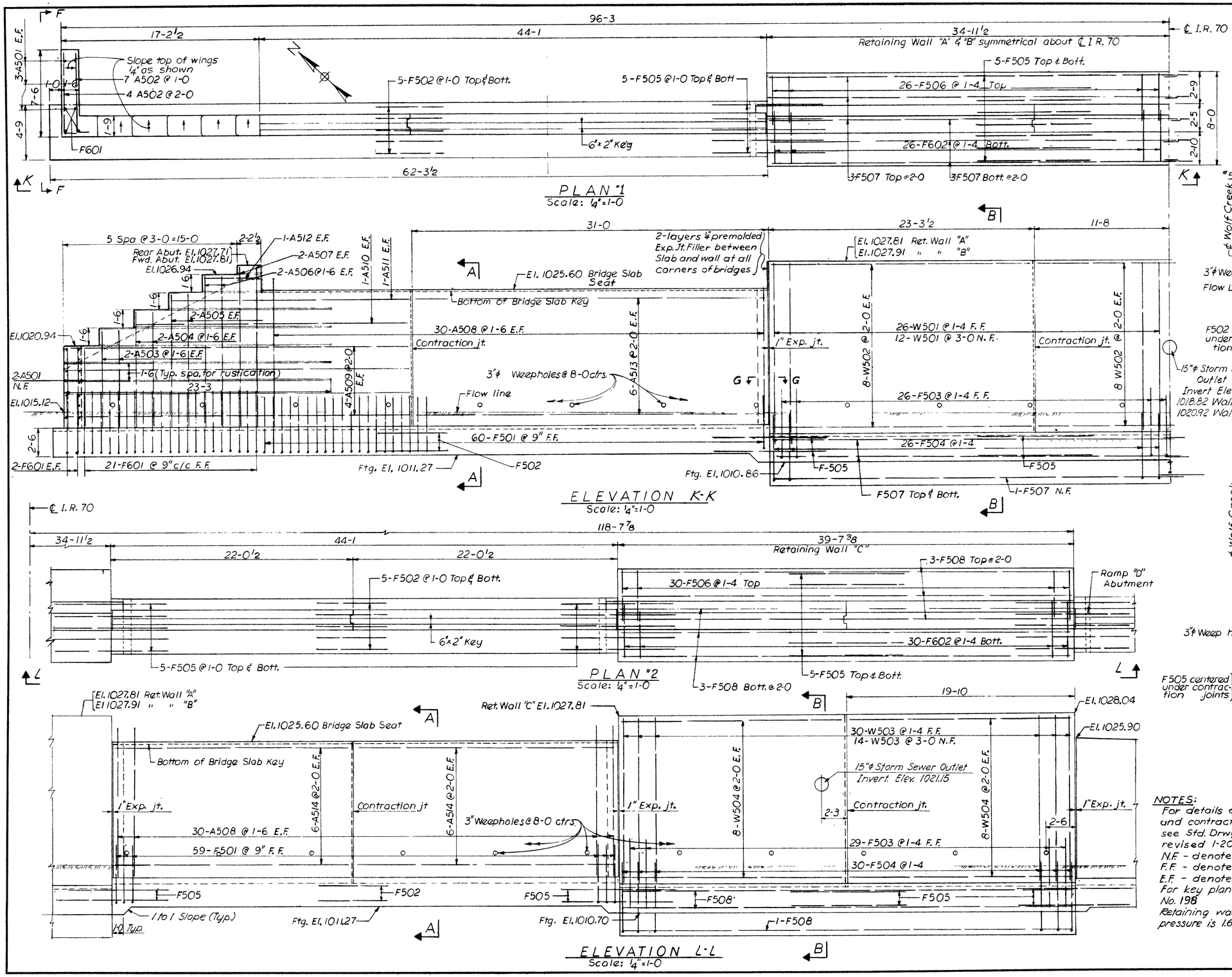
MONTGOMERY COUNTY — I.R.-70 STA. 181+50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S.		B.H.	K.A	10-9-62	

FED. RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

197

MONTGOMERY COUNTY
MOT-40-2.73



NOTES:
For details of rustication and contraction joints see Std. Drwg. SB-1-47, revised 1-20-48.
N.F. - denotes near face.
F.F. - denotes far face.
E.F. - denotes each face
For key plan see Sheet No. 198
Retaining wall design toe pressure is 1.6 tons per sq.ft.

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

ABUTMENT DETAILS
BRIDGE NO. MOT-40-0344
I.R-70 OVER WOLF CREEK-NORTH BRANCH

MONTGOMERY COUNTY — I.R-70 STA. 181+50

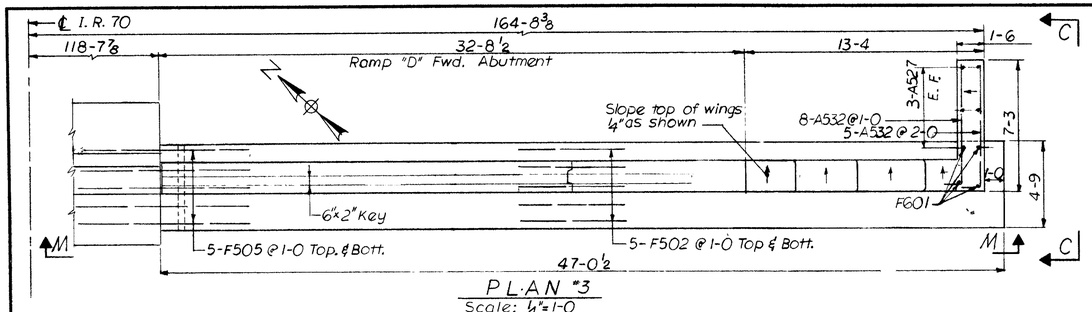
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	V.B.		B.H	KA	10-9-62	

Sh. 2

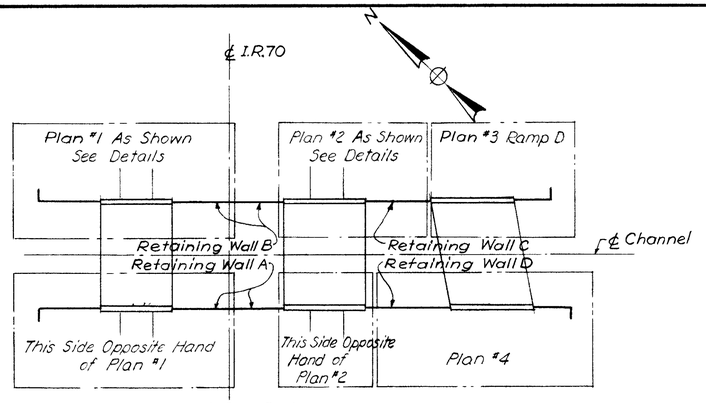
FED RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

198

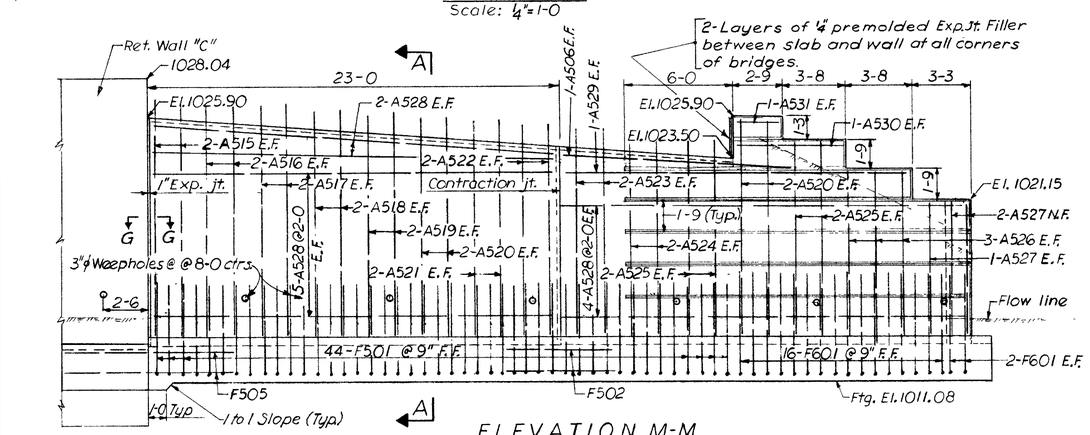
MONTGOMERY COUNTY
MOT-40-2.73



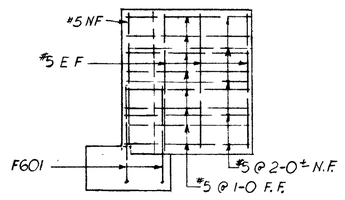
PLAN #3
Scale: 1/4"=1-0



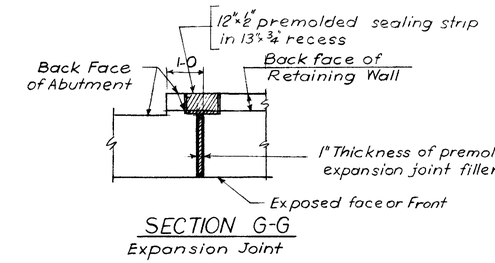
KEY PLAN
No Scale



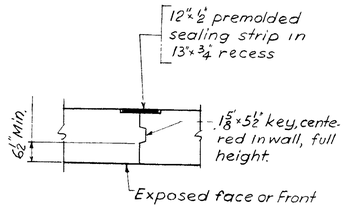
ELEVATION M-M
Scale: 1/4"=1-0



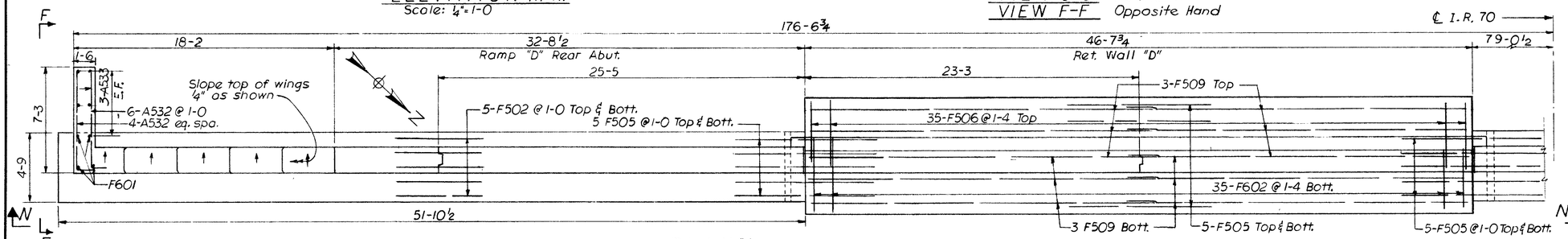
VIEW C-C As shown
VIEW F-F Opposite Hand



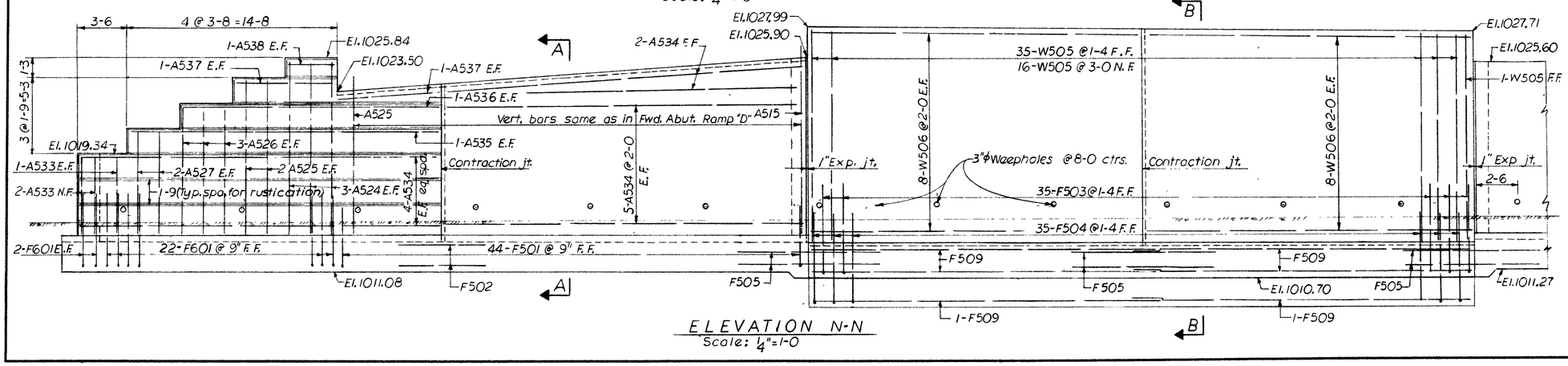
SECTION G-G
Expansion Joint



TYP SECTION THRU CONTRACTION JOINT



PLAN #4
Scale: 1/4"=1-0



ELEVATION N-N
Scale: 1/4"=1-0

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

ABUTMENT DETAILS
BRIDGE NO. MOT-40-0344
I.R.-70 OVER WOLF CREEK-NORTH BRANCH

MONTGOMERY COUNTY I.R.-70
STA. 181 + 50

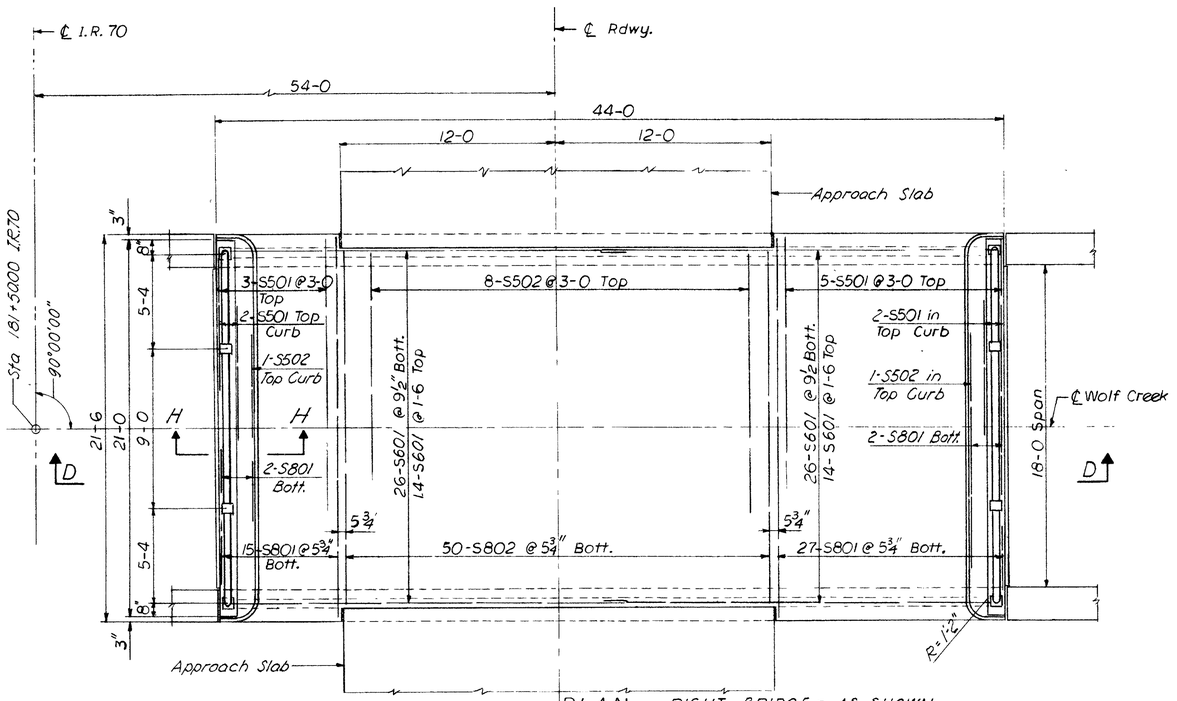
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HN	V.B		B.H	K.A	10-9-62	

Sh. 3

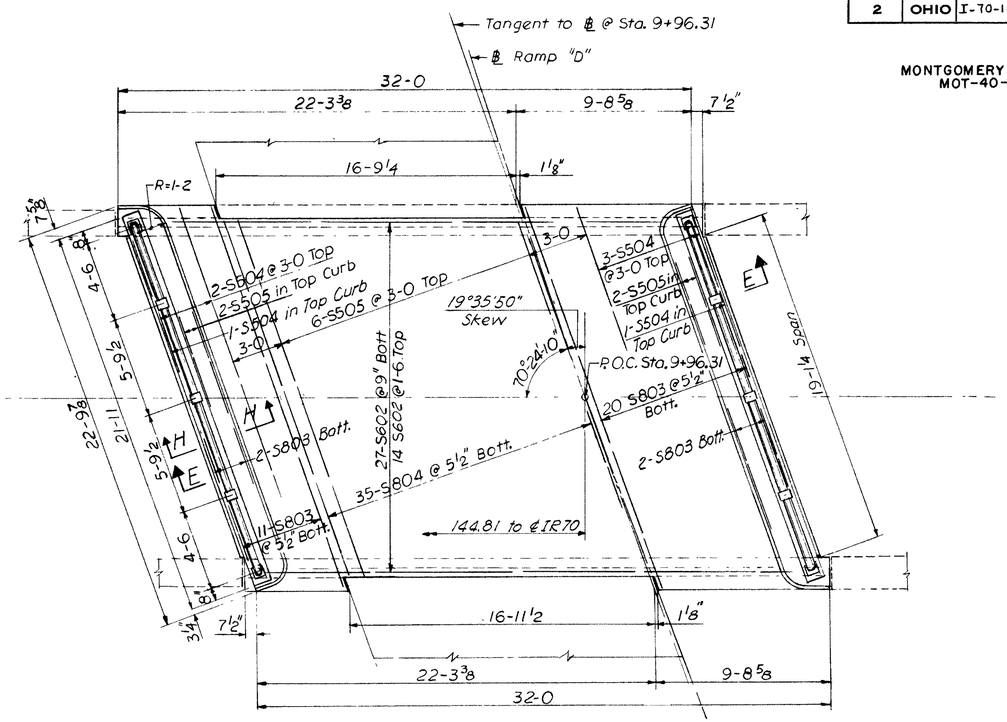
FED RD DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

199

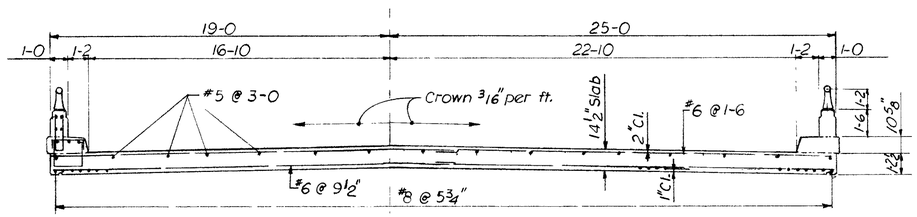
MONTGOMERY COUNTY
MOT-40-2.73



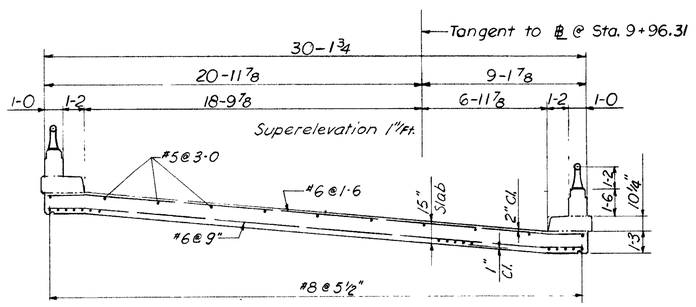
PLAN RIGHT BRIDGE - AS SHOWN
LEFT BRIDGE - SYMMETRICAL ABOUT I.R.70



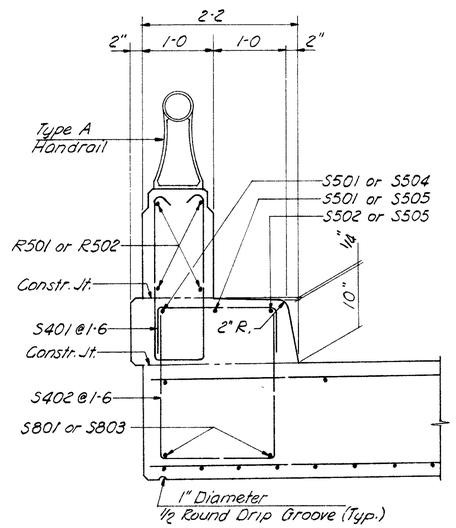
PLAN RAMP D



SECTION D-D



SECTION E-E



SECTION H-H

NOTES:
For details of parapet, curb, and railing see Std Drwg. AR-1-57, revised 4-2-62.
Slab thickness shown includes 1" for monolithic wearing surface.
A finished camber of ¼" shall be provided for each bridge.

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

SUPERSTRUCTURE DETAILS
BRIDGE NO. MOT-40-0344
I.R.-70 OVER WOLF CREEK - NORTH BRANCH
MONTGOMERY COUNTY I.R.-70 STA. 181+50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	V.B.		B.H.	K.A.	10-9-62	

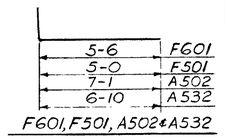
FED RD. DIVISION	STATE	PROJECT		200
2	OHIO	I-70-1(15)20		

MONTGOMERY COUNTY
MOT-40-2.73

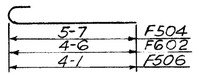
REINFORCING STEEL LIST

ABUTMENTS

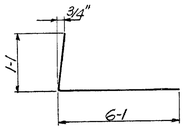
Mark	No. Req'd	Length	Type	Description	Weight
F601	96	6-2	B	Footing	889
F602	169	5-2	B	"	1312
F501	326	5-6	B	"	1870
F502	60	6-0	S	"	375
F503	168	7-1	B	"	1241
F504	169	6-2	B	"	1087
F505	140	10-0	S	"	1460
F506	169	4-8	B	"	823
F507	28	35-6	S	"	1037
F508	7	39-0	S	"	285
F509	14	23-10	S	"	348
A501	16	6-11	S	Abutment	115
A502	22	7-7	B	"	174
A503	8	8-5	S	"	70
A504	8	9-11	S	"	83
A505	8	11-5	S	"	95
A506	10	12-11	S	"	135
A507	8	13-8	S	"	114
A508	240	12-10	S	"	3212
A509	16	29-11	S	"	499
A510	4	23-11	S	"	100
A511	4	20-11	S	"	87
A512	4	4-10	S	"	20
A513	24	30-7	S	"	766
A514	48	21-8	S	"	1085
A515	8	13-2	S	"	281
A516	8	13-0	S	"	108
A517	8	12-9	S	"	106
A518	8	12-6	S	"	104
A519	8	12-4	S	"	103
A520	12	12-1	S	"	151
A521	8	11-10	S	"	99
A522	8	11-7	S	"	97
A523	8	11-4	S	"	95
A524	14	11-2	S	"	163
A525	16	10-10	S	"	181
A526	12	9-1	S	"	114
A527	14	7-4	S	"	107
A528	22	22-7	S	"	518
A529	2	19-5	S	"	41
A530	2	6-0	S	"	13
A531	2	2-4	S	"	5
A532	23	7-4	B	"	176
A533	10	5-6	S	"	57
A534	22	25-0	S	"	574
A535	2	21-7	S	"	45
A536	2	17-11	S	"	37
A537	4	7-0	S	"	29
A538	2	3-4	S	"	7
W501	152	14-3	S	Retaining Wall	2259
W502	96	22-11	S	"	5874
W503	44	14-5	S	"	662
W504	32	19-5	S	"	648
W505	52	14-4	S	"	777
W506	32	22-10	S	"	762



F601, F501, A502 & A532



F602, F504 & F506

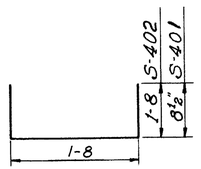


F503

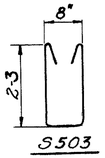
REINFORCING STEEL LIST

SUPERSTRUCTURE

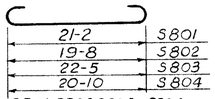
Mark	No. Req'd	Length	Type	Desc.	Weight
S801	88	23-4	B	Slab	5482
S802	100	21-10	B	"	5830
S803	35	24-7	B	"	2297
S804	35	23-0	B	"	2149
S601	160	22-9	S	Slab	5467
S602	41	31-7	S	"	1945
S501	24	21-2	S	Slab	530
S502	20	19-8	S	"	410
S503	90	5-10	b	Curb	548
S504	7	22-5	S	Slab	164
S505	10	20-10	S	"	217
R501	16	20-8	S	Railing	*
R502	8	21-7	S	"	*
S401	90	2-11	b	Slab	175
S402	90	4-10	b	"	291



S401 & S402



S503



S801, S802, S803 & S804

* Included with Railing Type "A" for payment.

REINFORCING STEEL LIST

REPLACEMENT BARS

Mark	No. Req'd	Length	Type	Weight
RE401	1	4-9	B	
RE501	2	5-7	S	
RE601	1	5-11	S	
RE801	1	6-6	B	

NOTE:
Bar size is indicated in the bar mark. The first digit, where three digits are used, and the first two digits, where four digits are used, indicate the bar size number. For example, P501 is a No. 5 size bar and P1001 is a No. 10 size bar.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

REINFORCING STEEL DETAILS
BRIDGE NO. MOT-40-0344
I.R.-70 OVER WOLF CREEK- NORTH BRANCH
MONTGOMERY COUNTY — I.R.-70 STA. 181 + 50

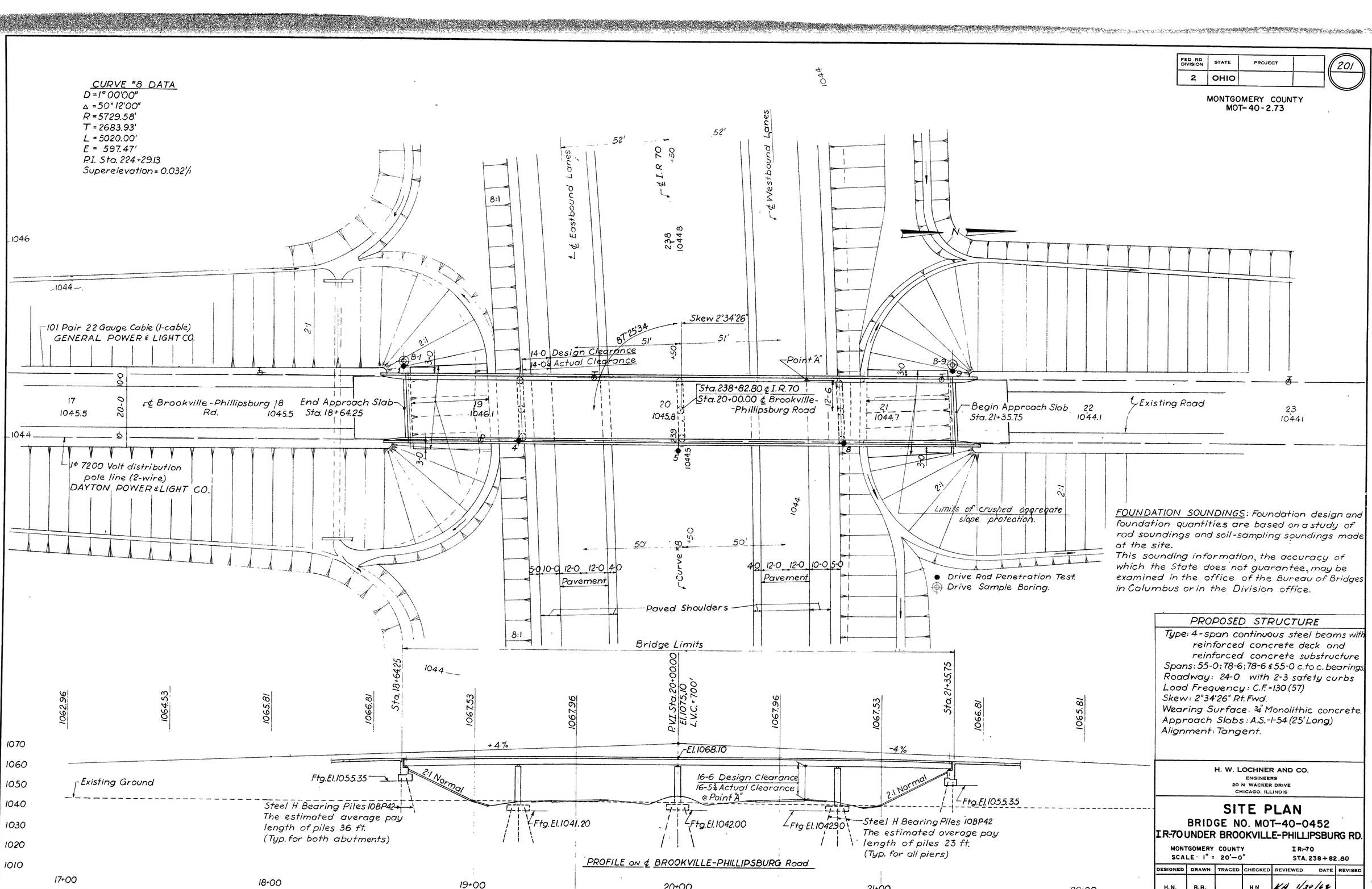
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B		B.H.	K.A.	6-27-64	

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

201

MONTGOMERY COUNTY
MOT-40-2.73

CURVE #8 DATA
D = 1° 00'00"
Δ = 50° 12'00"
R = 5729.58'
T = 2683.93'
L = 5020.00'
E = 597.47'
P.I. Sta. 224+29.13
Superelevation = 0.032'/'



PROFILE on ℄ BROOKVILLE-PHILLIPSBURG Road

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site.
This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division office.

PROPOSED STRUCTURE

Type: 4-span continuous steel beams with reinforced concrete deck and reinforced concrete substructure
Spans: 55-0; 78-6; 78-6 & 55-0 c.to c. bearings
Roadway: 24-0 with 2-3 safety curbs
Load Frequency: C.F. = 1.30 (57)
Skew: 2°34'26" Rt. Fwd.
Wearing Surface: ¾" Monolithic concrete.
Approach Slabs: A.S.-1-54 (25' Long)
Alignment: Tangent.

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

SITE PLAN
BRIDGE NO. MOT-40-0452
I.R.-70 UNDER BROOKVILLE-PHILLIPSBURG RD.

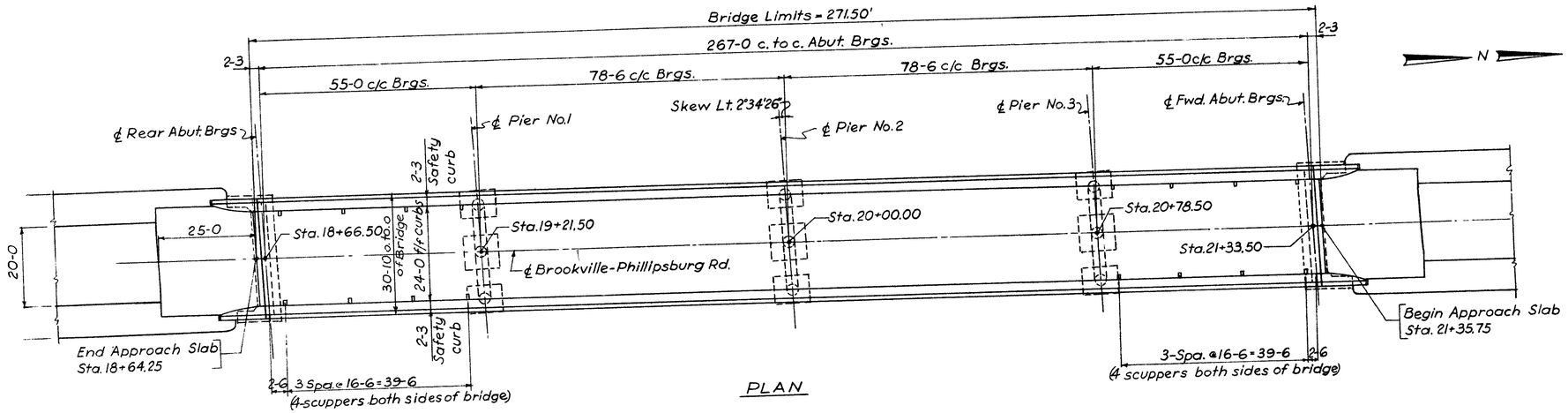
MONTGOMERY COUNTY — I.R.-70
SCALE: 1" = 20'-0" — STA. 238+82.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B.		H.N.	K.A.	1/30/62	

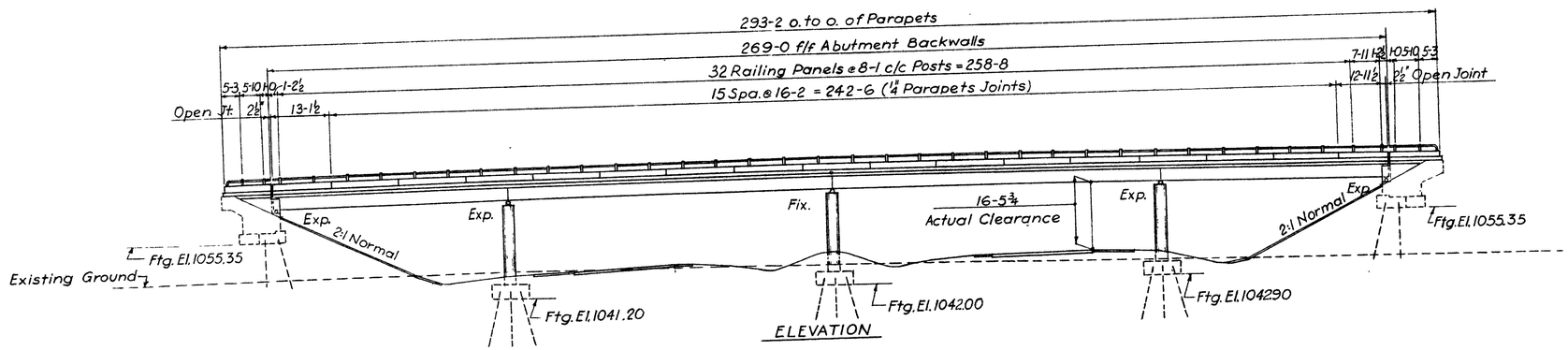
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

202

MONTGOMERY COUNTY
MOT-40-2.73



PLAN



ELEVATION

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the abutment piles:
- 33 tons per pile using a 7000 ft. lb. hammer
- 25 tons per pile using an 11000 ft. lb. hammer
- 24 tons per pile using a 15000 ft. lb. or greater hammer.

For the pier piles:
- 47 tons per pile using an 11000 ft lb. hammer
- 40 tons per pile using a 15000 ft lb. or greater hammer.

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 22 tons per pile for abutment piles and 34 tons per pile for the pier piles.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Gen.	Super.	Piers	Abut.
E-2	258	Cu. Yds.	Unclassified Excavation			69	189
S-1	254	Cu. Yds	Class "C" concrete, superstructure		254		
S-1	69	Cu. Yds.	Class "C" concrete, piers above footings			69	
S-1	125	Cu. Yds.	Class "E" concrete, abutments				125
S-1	57	Cu. Yds.	Class "E" concrete, pier footings			57	
S-18	2008	Lin. ft.	Steel piles 10BP42			1288	720
S-16	Lump	Sum	First test pile	Lump			
S-4	96,359	Lbs.	Reinforcing steel		66,351	21,687	8321
S-7	223,500	Lbs.	Structural steel		223,500		
S-8	223,500	Lbs.	Field painting of structural steel		223,500		
S-14	586.33	Lin. Ft.	Railing Type "A" (aluminum rail & supports, concrete parapet)		586.33		21
S-29	21	Cu. Yds.	Porous backfill		16		
S-29	16	Each	Scuppers	364			
I-10	364	Sq. Yds.	Crushed aggregate slope protection		254		
Special	254	Each	Water-reducing, set-retarding admixture *				

* See proposal note.

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55 revised 2-2-59, AR-1-57 revised 4-2-62 and CSB-2-56 Sheets 2 and 3 revised 2-2-59

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

SHOP PAINTING STEEL. The surface preparation of all steel, requiring shop painting as per the Plans & Specifications, shall be accomplished by blast cleaning or power tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel & are located near the center of any span.

SURFACE FINISH OF CONCRETE: The requirements of Sec. S-1.22, Rubbed Finish shall apply to the following exposed concrete surfaces:
a. The entire superstructure except the top & bottom surfaces of curbs & roadways.
b. The entire surface of piers & abutments except bridge seats, backwalls & the face of spill-through abutments between outside beams

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine

SHEET LEAD shall conform to the requirements of ASTM Designation B29 without restriction to the Common Desilverized type.

UTILITY LINES: All expense involved in relocating (installing) the affected utility lines shall be borne by the owner. The contractor and Owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

H. W. LOCHNER AND CO.
ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

GENERAL PLAN

BRIDGE NO. MOT-40-0452
IR-70 UNDER BROOKVILLE-PHILLIPSBURG RD.

MONTGOMERY COUNTY — I.R-70 STA. 238+82.80

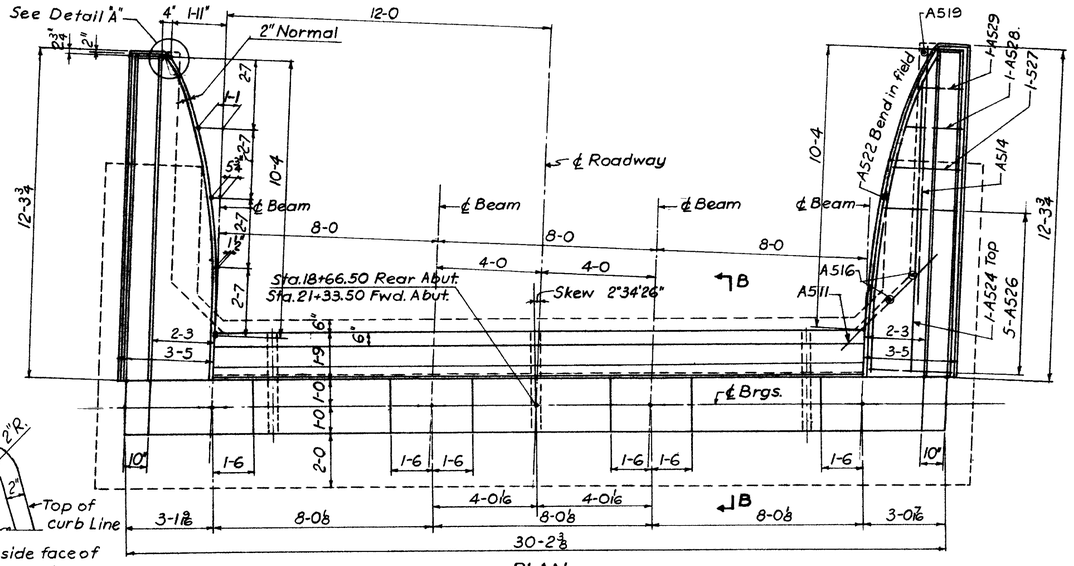
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B.		H.N.	K.A. 6-12-62		

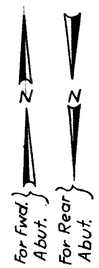
SH. No.

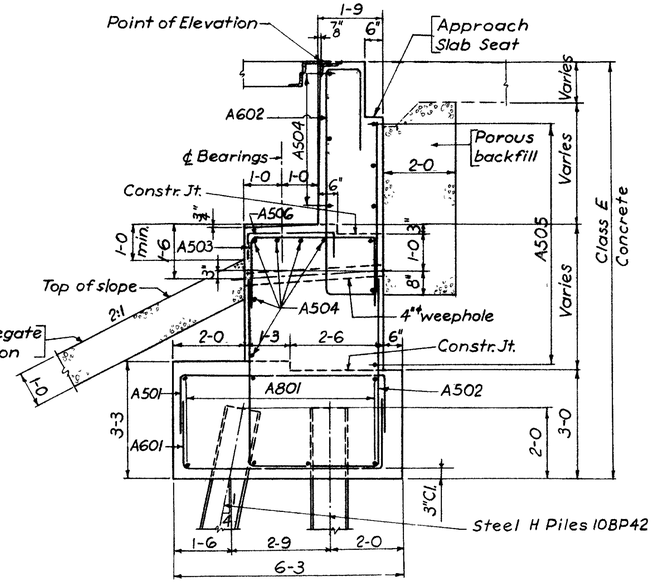
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

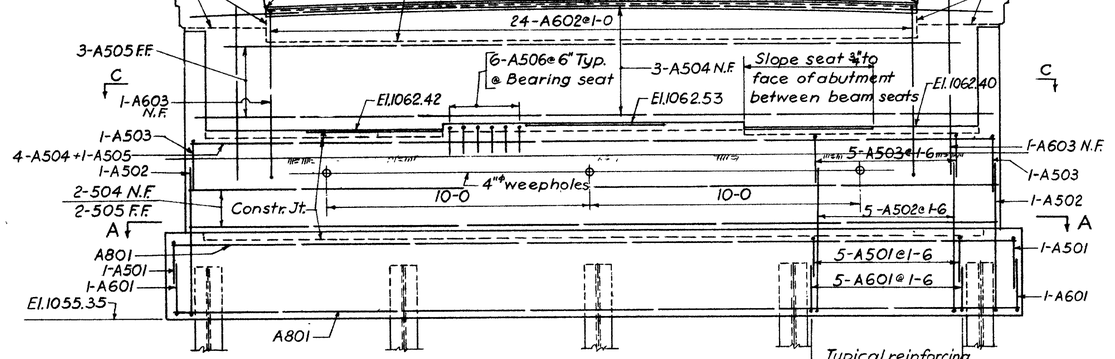
203

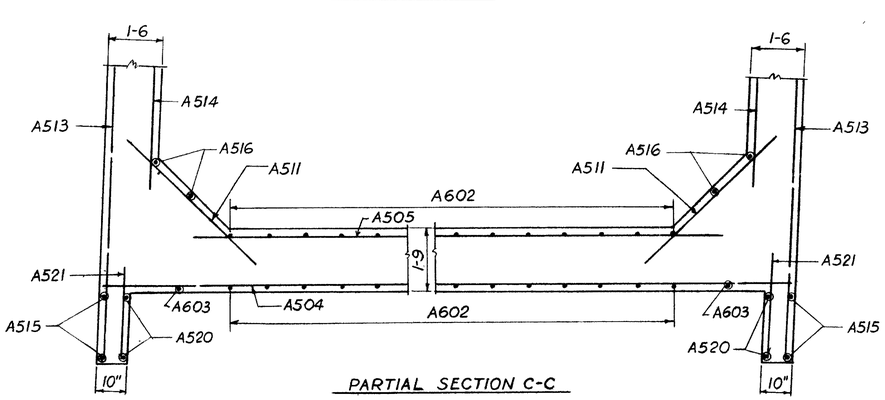
MONTGOMERY COUNTY
MOT-40-2.73

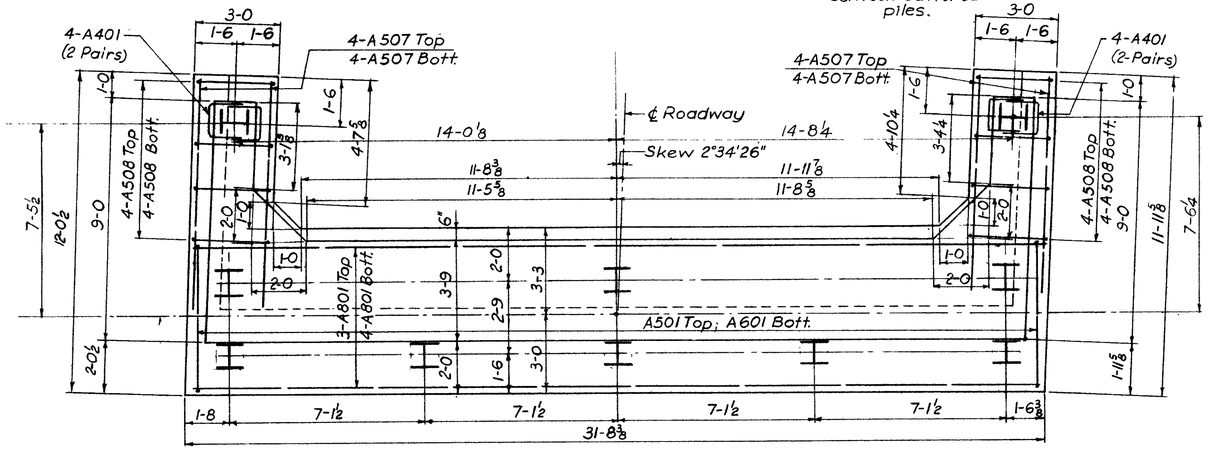












PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and the piles driven.

NOTES:
1. Excavation for porous backfill, in excess of that required for construction of the abutments, shall be considered as paid for in the bid price per cu. yd. for porous backfill.
2. For reinforcing steel details see sheet 207.
3. N.F. - indicates near face
   F.F. - indicates far face.
   E.F. - indicates each face.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

ABUTMENT DETAILS
BRIDGE NO. MOT-40-0452
I.R-70 UNDER BROOKVILLE-PHILLIPSBURG RD.

MONTGOMERY COUNTY — I.R-70 STA. 238+82.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B.		H.N.	K.A.	6-12-62	

SH. No. 3

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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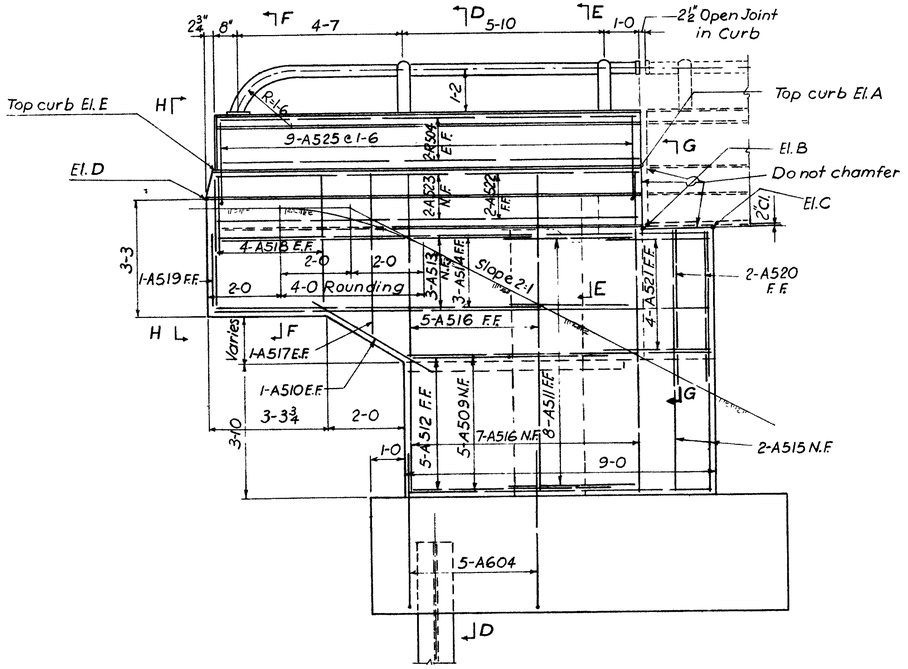
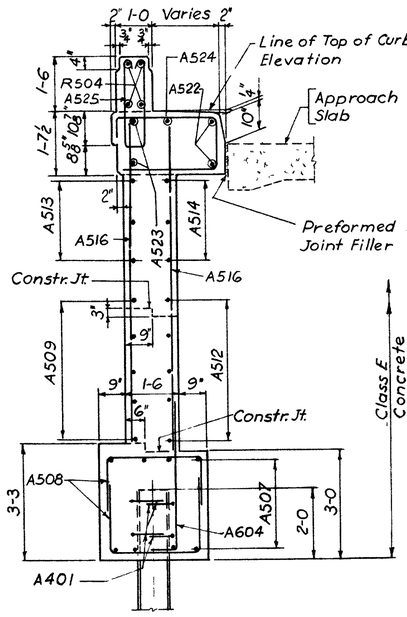
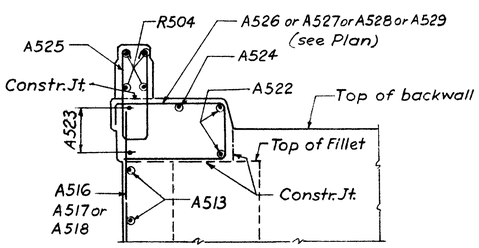
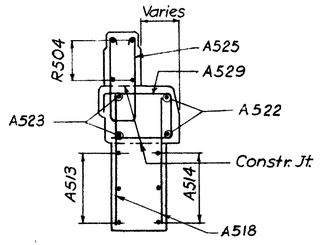
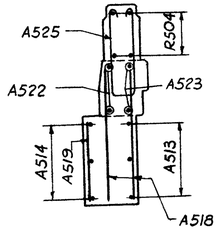
MONTGOMERY COUNTY
MOT-40-2.73

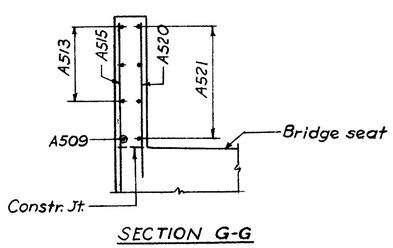


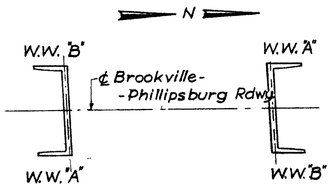












Wingwall	Elevation				
	El. A	El. B	El. C	El. D	El. E
W.W. "A"	1067.74	1065.96	1065.99	1066.64	1067.55
W.W. "B"	1067.72	1065.94	1065.97	1066.62	1067.53

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

WINGWALLS
BRIDGE NO. MOT-40-0452
I.R.-70 UNDER BROOKVILLE-PHILLIPSBURG RD.

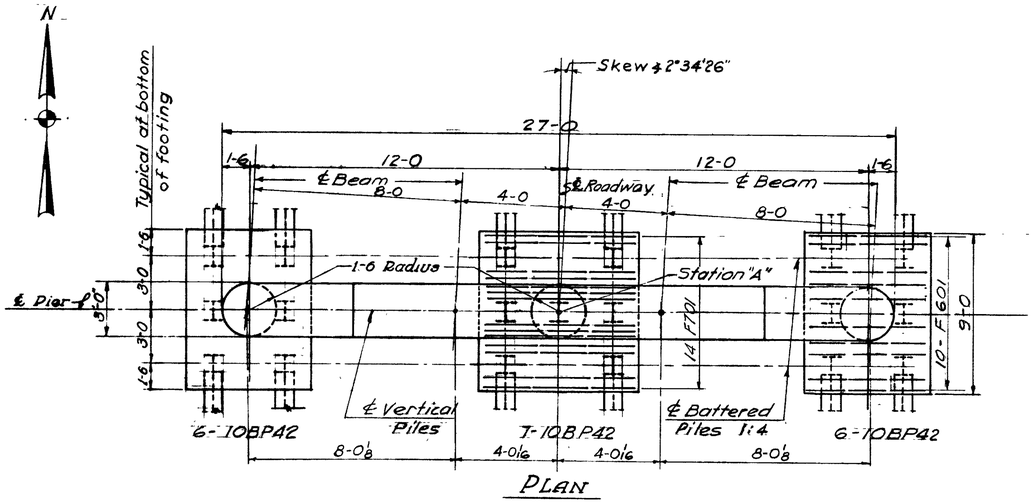
MONTGOMERY COUNTY — I.R.-70
STA. 238+82.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BH	B.B.		HN.	K.A.	6-12-62	

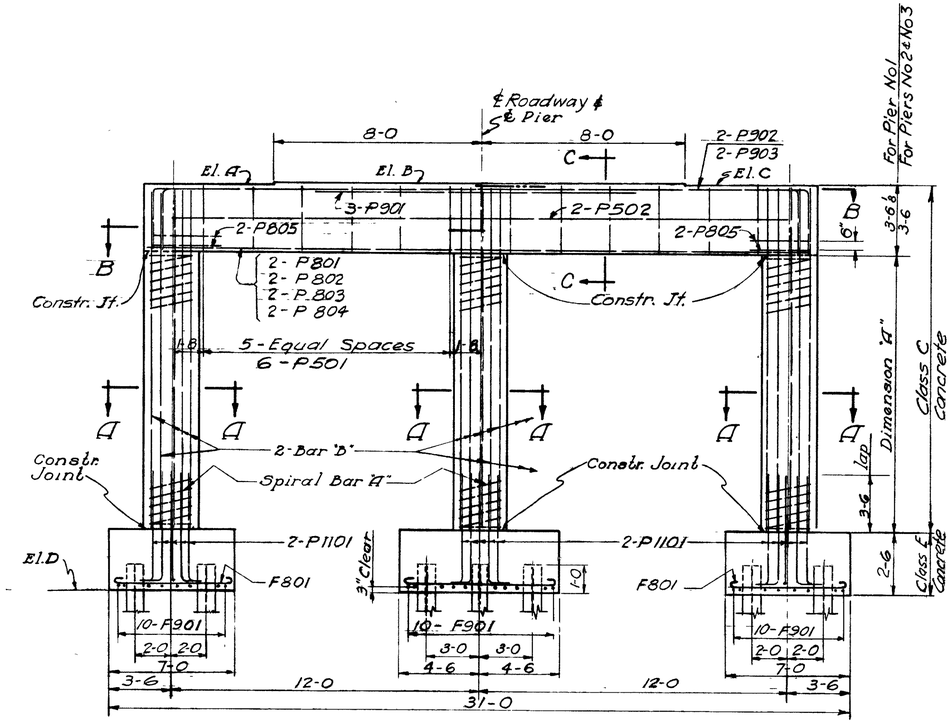
SH. No. 4

FED. RD. DIVISION	STATE	PROJECT		205
2	OHIO			

MONTGOMERY COUNTY
MOT-40-2.73

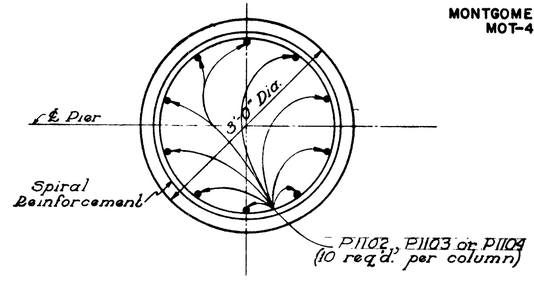


PLAN

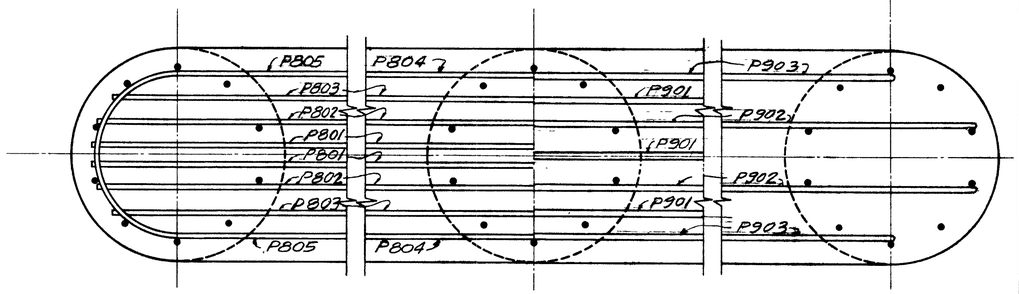


ELEVATION

	Station "A"	ELEVATION "A"	"B"	"C"	"D"	BAR "A"	"B"	DIMENSION "A"
Pier No. 1	19+21.50	1062.56	1062.69	1062.57	1041.20	SP401	P1102	15-4⅜
Pier No. 2	20+00.00	1062.81	1062.94	1062.81	1042.00	SP402	P1103	14-9¾
Pier No. 3	20+78.50	1062.57	1062.69	1062.56	1042.90	SP403	P1104	13-7⅞

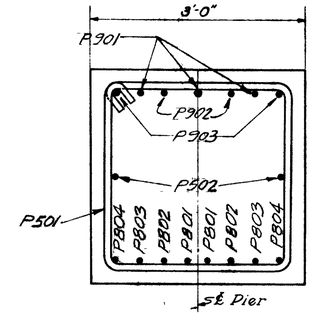


SECTION A-A



SECTION B-B

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat of Pier No. 2, so as to avoid interference with the drilling of anchor bar holes.



SECTION C-C

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N WACKER DRIVE
CHICAGO, ILLINOIS

PIER DETAILS

BRIDGE NO. MOT-40-0452
I.R-70 UNDER BROOKVILLE-PHILLIPSBURG RD.
MONTGOMERY COUNTY I.R-70
STA. 238+82.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S.		H.N.	K.A.	6-12-62	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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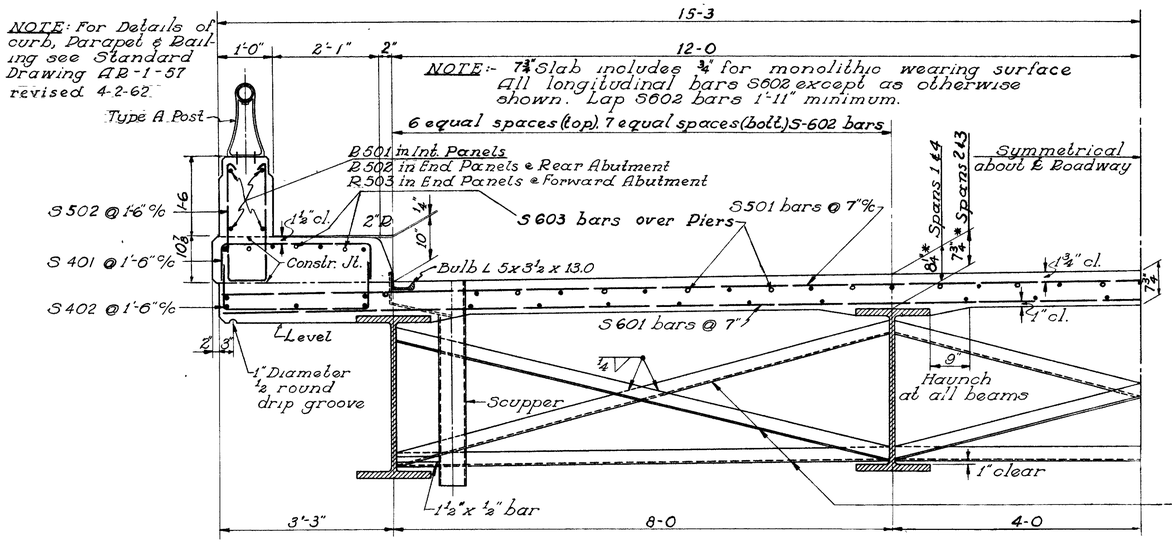
MONTGOMERY COUNTY
MOT-40-2.73

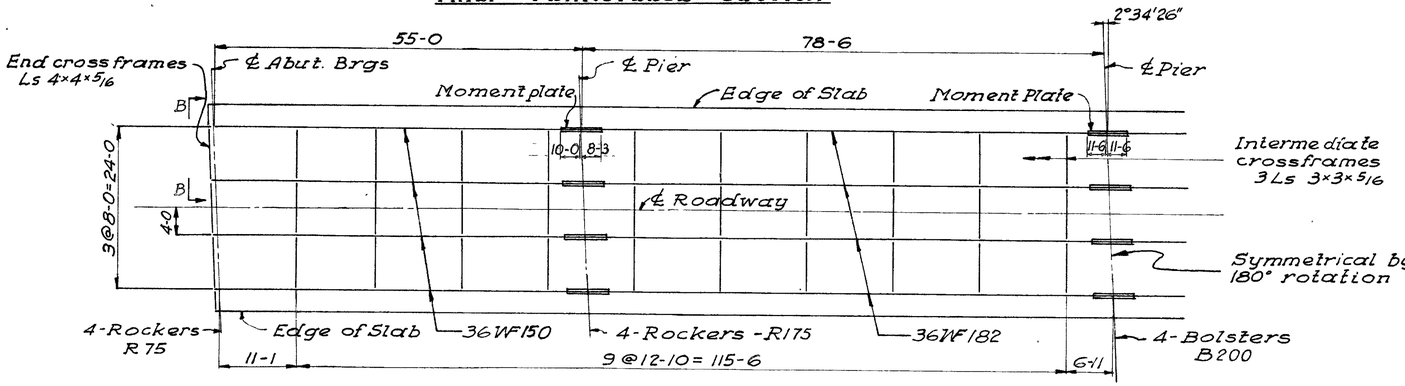


HALF TRANSVERSE SECTION

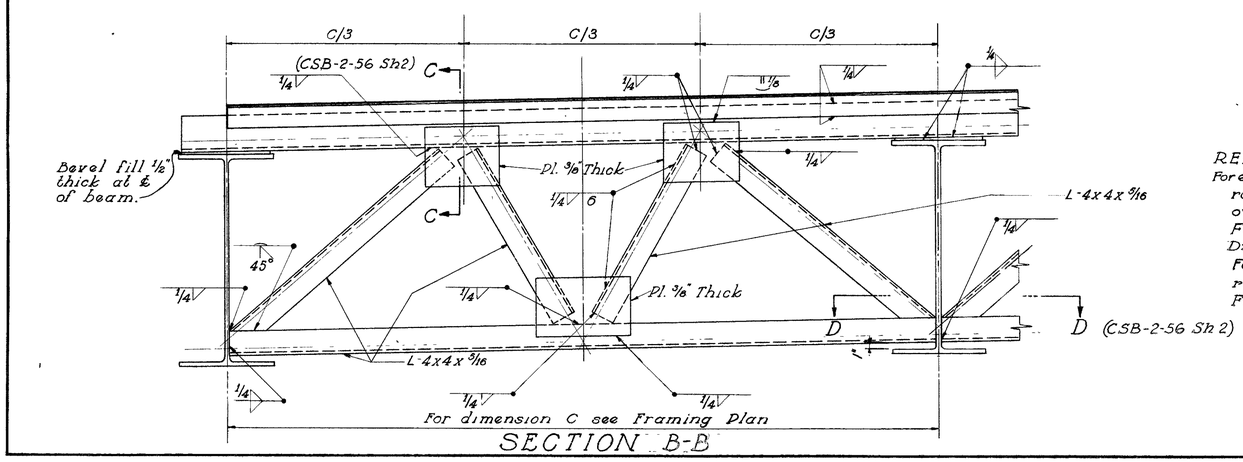
DEFLECTION AND CAMBER				
Location	Outside Beams		Inside Beams	
	Span 1 & 4	Span 2 & 3	Span 1 & 4	Span 2 & 3
Deflection due to Weight of Steel.	0	⅛"	0	⅛"
Deflection due to remaining dead load.	⅛	½	⅛	⅜
Convexity required for vertical Curve	½	1	½	1
Sum of Deflections and Convexity.	⅝	1⅜	⅝	1½
Required Camber	0	1⅜"	0	1½"

NOTE.
* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

Intermediate crossframe angles 3x3x5/16. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

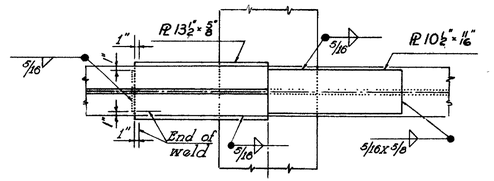


STEEL FRAMING PLAN

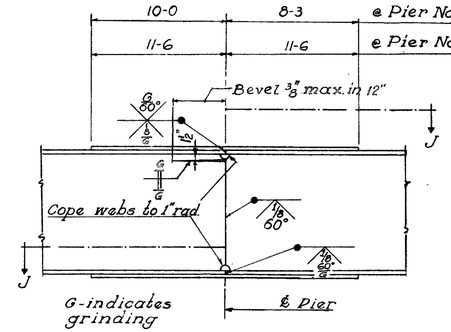


SECTION B-B

REFERENCES:-
For end dam details, part plan & sections @ abutments, bridge roadway crown & diagram showing stagger of S603 bars over piers, see Std. Drwg. CSB-2-56, sh. # 2 of 6, revised 2-2-59
For gutter & scupper details & curb plate details see Std. Drwg. CSB-2-56 sh #3 of 6, revised 2-2-59.
For details of rockers & bolsters see Std. Drwg. R.B-1-55, revised 2-2-59.
For Additional Notes see Sheet No. 202.



SECTION J-J



BEAM SPLICE DETAILS

NOTE -
Splitting of web shall be required for all beams having depths differing by more than ⅛".

BEAM SPLICE WELDING PROCEDURE:
1. Raise end of beam at second pier 1½"
2. Butt weld beam flanges and web at first pier using the following sequence: make one pass on each flange, then two on the web; repeat, using one pass at each location, until welds are completed
3. Weld top and bottom flange moment plates at first pier.
4. Lower end of beam at second pier.
5. Make splice at the second and succeeding pier in the same manner raising the end of the beam 2½" at the third pier and ⅜" at the abutment.

DECK SLAB HAUNCH:-
The haunch in the deck slab adjacent to the top of steel beams, which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12" except that the maximum slope shall not exceed 3" inches per foot. Payment for deck slab concrete shall be based on the 9" width.

SOLE PLATES for the rear and forward abutment rockers shall be beveled to follow the roadway gradient. Plates shall be 2½" thick at ℄ rocker.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SUPERSTRUCTURE DETAILS

BRIDGE NO. MOT-40-0452
I.R.-70 UNDER BROOKVILLE-PHILLIPSBURG RD.
MONTGOMERY COUNTY
I.R.-70
STA. 238+82.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.M.	B.B		H.N.	KA	6-12-62	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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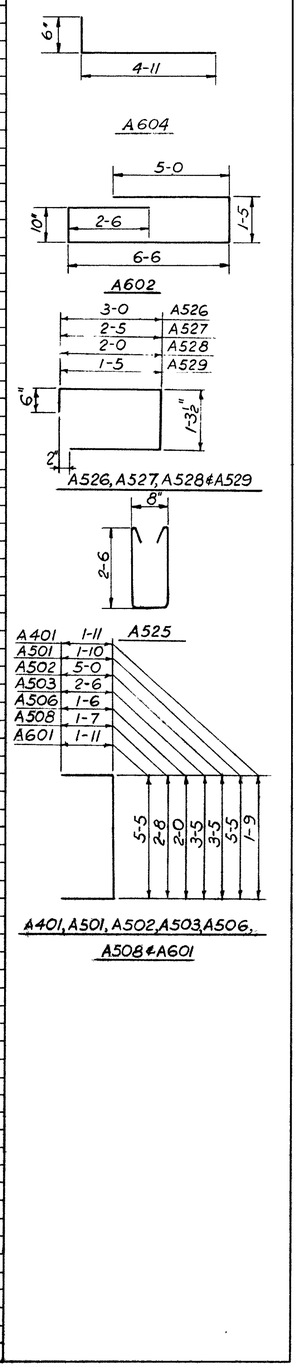
MONTGOMERY COUNTY
MOT-40-2.73

REINFORCING STEEL LIST

TWO ABUTMENTS

Mark	No. Req'd	Length	Type	Description	Weight
A801	14	31-4	S	Footing	1171
A601	44	8-11	B	Footing	589
A602	48	15-7	B	Backwall	1124
A603	4	5-9	S	"	34
A604	20	5-3	B	Footing	158
A501	44	8-10	B	Footing	405
A502	44	13-2	B		604
A503	44	8-2	B		375
A504	18	29-10	S		560
A505	12	25-2	S		315
A506	48	4-9	B	Bridge seat	238
A507	32	8-0	S	Footing	267
A508	32	5-7	B	"	186
A509	20	8-8	S	Wingwalls	181
A510	8	6-0	S	"	50
A511	32	5-6	S	"	184
A512	20	4-6	S	"	94
A513	12	14-0	S	"	175
A514	12	10-0	S	"	125
A515	8	7-3	S	"	60
A516	48	8-11	S	"	446
A517	8	4-9	S	"	40
A518	32	3-9	S	"	125
A519	4	2-0	S	"	8
A520	8	4-4	S	"	37
A521	16	3-6	S	"	58
A522	8	12-10	S	"	107
A523	8	11-10	S	"	99
A524	4	9-6	S	"	40
A525	36	6-3	B	"	234
A526	20	7-3	B	"	151
A527	4	6-1	B	"	25
A528	4	5-3	B	"	22
A529	4	4-1	B	"	17
R523	See	Superstructure Bar List			
A401	16	5-4	B	Footing	57

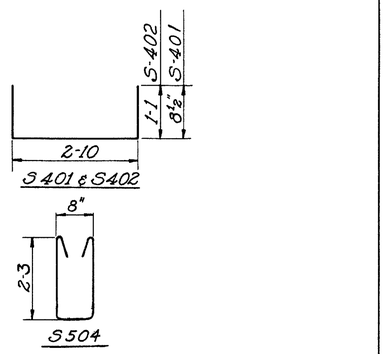


REINFORCING STEEL LIST

SUPERSTRUCTURE

Mark	No. Req'd	Length	Type	Desc.	Weight
S601	460	30-2	S	Slab	20845
S602	424	36-5	S	"	23192
S603	72	33-0	S	"	3569
S501	460	30-2	S	Slab	14475
S502	358	5-10	B	Curb	2177
S401	358	4-0	B	Curb	957
S402	358	4-9	B	"	1136
R501	120	15-10	S	Parapet	*
R502	8	12-10	S	"	*
R503	8	12-8	S	"	*
R504	16	11-9	S	"	*

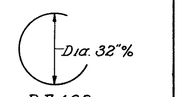
* to be included with railing for payment.



REINFORCING STEEL LIST

REPLACEMENT BARS

Mark	No. Req'd	Length	Type	Weight
RE401	1	5-3	S	
* RE402	1	5-3	B	
RE501	2	5-7	S	
RE601	3	5-11	S	
RE701	1	6-2	S	
RE801	1	6-6	S	
RE901	1	6-10	S	
RE1101	1	7-6	S	

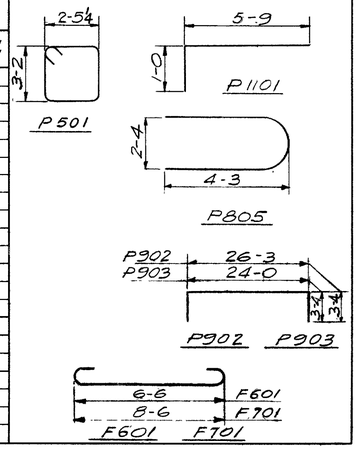


* Replacement for spiral reinforcing bar shall not have deformations but shall in other respects conform to Item 5-4.

REINFORCING STEEL LIST

PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Length	Type	Weight
P501	12	12	12	11-9	B	441
P502	2	2	2	24-0	S	150
P801	2	2	2	26-4	S	422
P802	2	2	2	26-2	S	419
P803	2	2	2	25-10	S	414
P804	2	2	2	24-0	S	384
P805	4	4	4	9-10	B	315
P901	3	3	3	12-0	S	367
P902	2	2	2	32-6	B	663
P903	2	2	2	30-3	B	617
P1101	30	30	30	6-6	B	3108
P1102	30			18-7	S	2961
P1103		30		18-0	S	2869
P1104			30	16-10		2683
F601	20	20	20	7-10	B	706
F701	44	44	44	10-2	B	2743



SPIRAL REINFORCING STEEL LIST FOR PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Core Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	3			32"	15-4⅜	4½"	44	853
SP402		3		32"	14-9¾	4½"	42	816
SP403			3	32"	13-7⅞	4½"	39	756

NOTE:

Bar size is indicated in the bar mark. The first digit where three digits are used and the first two digits where four digits are used, indicate the bar size number. For example, P501 is a No. 5 size bar and P1101 is a No. 11 size bar.

SPIRAL REINFORCING BARS

The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown in the steel list for the spiral bars is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 5-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

REINFORCING STEEL DETAILS

BRIDGE NO. MOT-40-0452
I.R-70 UNDER BROOKVILLE-PHILLIPSBURG RD.
MONTGOMERY COUNTY — I.R-70 STA. 238+82.80

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N	B.B & H.S.		B.H	K.A.	6-12-62	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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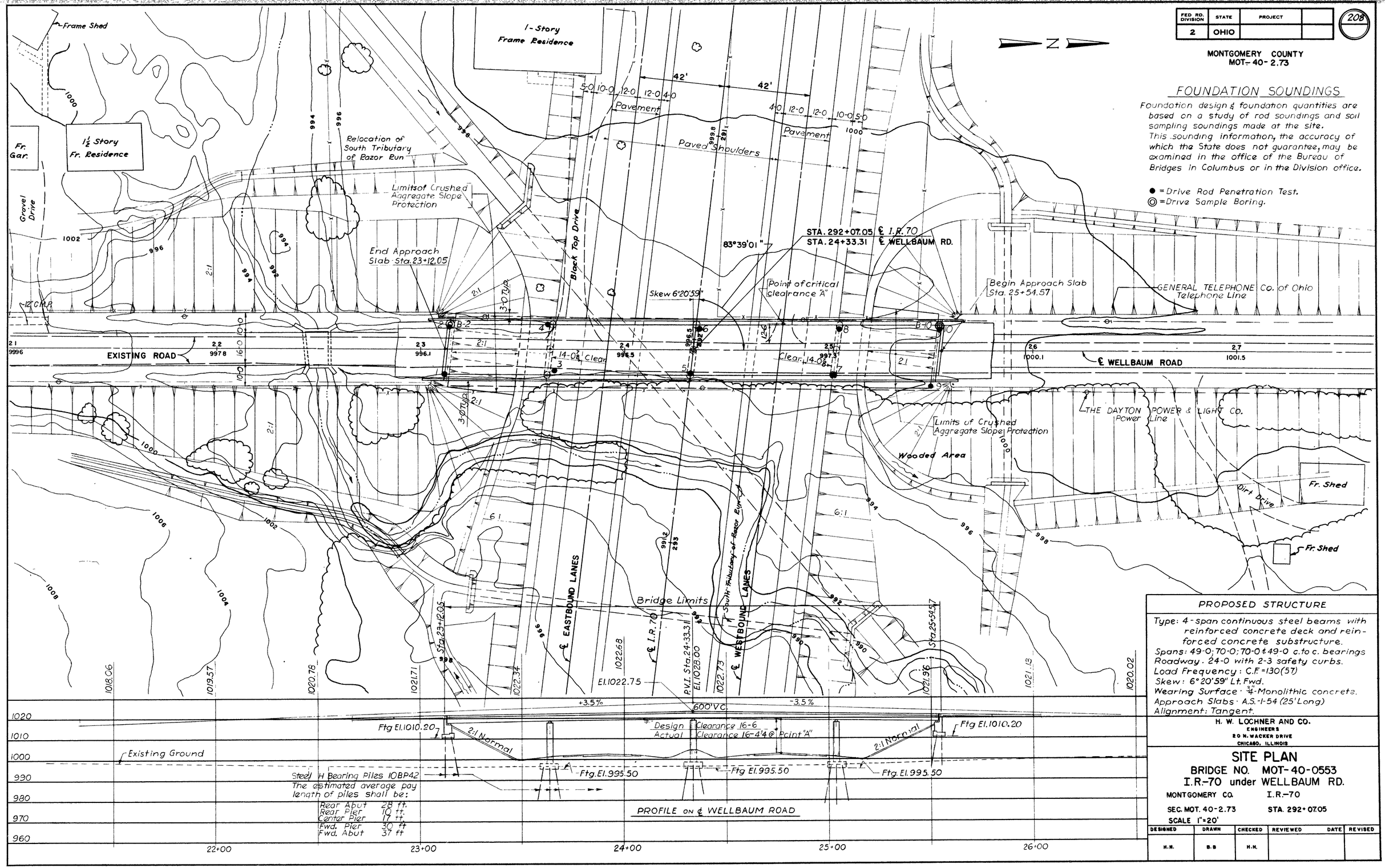
MONTGOMERY COUNTY
MOT-40-2.73

FOUNDATION SOUNDINGS

Foundation design & foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division office.

● = Drive Rod Penetration Test.
◎ = Drive Sample Boring.



PROPOSED STRUCTURE

Type: 4-span continuous steel beams with reinforced concrete deck and reinforced concrete substructure.
Spans: 49-0; 70-0; 70-0 & 49-0 c. to c. bearings
Roadway. 24-0 with 2-3 safety curbs.
Load Frequency: C.F=130(57)
Skew: 6°20'59" Lt. Fwd.
Wearing Surface: ¾" Monolithic concrete.
Approach Slabs: A.S.-1-54 (25' Long)
Alignment: Tangent.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SITE PLAN

BRIDGE NO. MOT-40-0553
I.R.-70 under WELLBAUM RD.

MONTGOMERY CO. I.R.-70
SEC. MOT. 40-2.73 STA. 292+07.05
SCALE 1"=20'

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B	H.N.			

SH. No.1

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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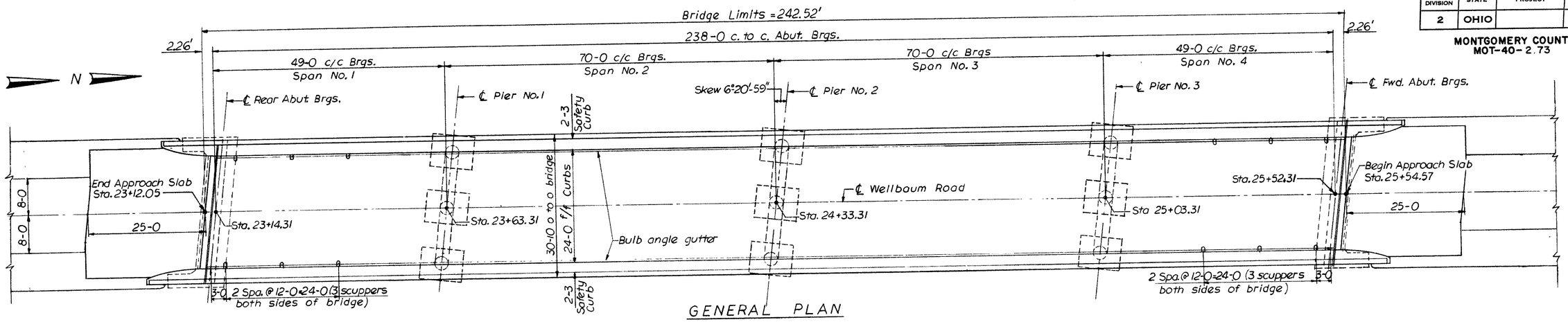
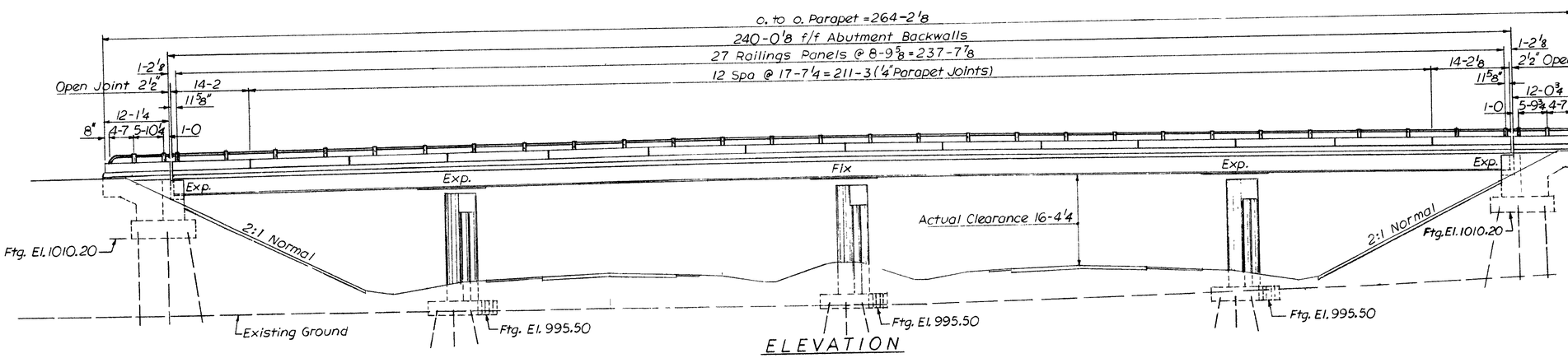
MONTGOMERY COUNTY
MOT-40-2.73



GENERAL PLAN



ELEVATION

Dimensions shown are on ℄ Railing for near side of structure. Far side same by 180° rotation

PILES shall be driven to a minimum bearing capacity of 22 tons per pile for the forward abutment.
Piles for the rear abutment and piers shall be driven to firm contact with rock.
If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the rear abutment piles:
35 tons per pile using a 7000 ft. lb. hammer
27 " " " " " 11000 " "
25 " " " " " 15000 " "

For the pier No. 1 piles:
46 tons per pile using a 11000 ft. lb. hammer
39 " " " " " 15000 " "

For the pier No. 2 piles:
56 tons per pile using a 11000 ft. lb. hammer
48 " " " " " 15000 " "

For the pier No. 3 piles:
64 tons per pile using a 11000 ft. lb. hammer
56 " " " " " 15000 " "

If the energy rating of the hammer is between ratings as shown above, the required formula capacity shall be determined by interpolation.

The design load is 22 tons per pile for abutment piles and 35.3 tons per pile for the pier piles.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Gen.	Super.	Piers	Abut.
E-2	217	Cu.Yds.	Unclassified Excavation			27	190
S-1	232	Cu.Yds.	Class "C" concrete, superstructure		232		
S-1	69	Cu.Yds.	Class "C" concrete, piers above footings			69	
S-1	182	Cu.Yds.	Class "E" concrete, abutments				182
S-1	53	Cu.Yds.	Class "E" concrete, pier footings			53	
S-16	Lump	Sum	First test pile	Lump			
S-18	1660	Lin.ft.	Steel piles 10BP42			1010	650
S-4	90,569	Lbs.	Reinforcing steel		58537	23,371	8661
S-7	173600	Lbs.	Structural steel		173600		
S-8	173600	Lbs.	Field painting of structural steel		173600		
S-14	528.36	Lin. Ft.	Railing Type A (aluminum rail & supports, concrete parapet)		528.36		
S-29	20	Cu.Yds.	Porous backfill				20
S-29	12	Ea.	Scuppers		12		
I-10	310	Sq.Yds.	Crushed aggregate slope protection	310			
Special	232	Ea.	Water-reducing, set-retarding admixture *		232		

* See Proposal Note

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55 revised 2-2-59, AR-1-57 revised 4-2-62 and CSB-2-56 Sheets 2 and 3 revised 2-2-59

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

SHOP PAINTING STEEL. The surface preparation of all steel, requiring shop painting as per the Plans & Specifications, shall be accomplished by blast cleaning or power tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel & are located near the center of any span.

SURFACE FINISH OF CONCRETE: The requirements of Sec. S-1.22, Rubbed Finish shall apply to the following exposed concrete surfaces:
a. The entire superstructure except the top & bottom surface of curbs & roadways.
b. The entire surface of piers & abutments except bridge seats, backwalls & the face of spill-through abutments between outside beams

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

SHEET LEAD shall conform to the requirements of ASTM Designation B29 without restriction to the Common Desilverized type.

UTILITY LINES: All expense involved in relocating (installing) the affected utility lines shall be borne by the owner(s). The contractor and Owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

GENERAL PLAN
BRIDGE NO. MOT-40-0553
I.R.-70 UNDER WELLBAUM ROAD

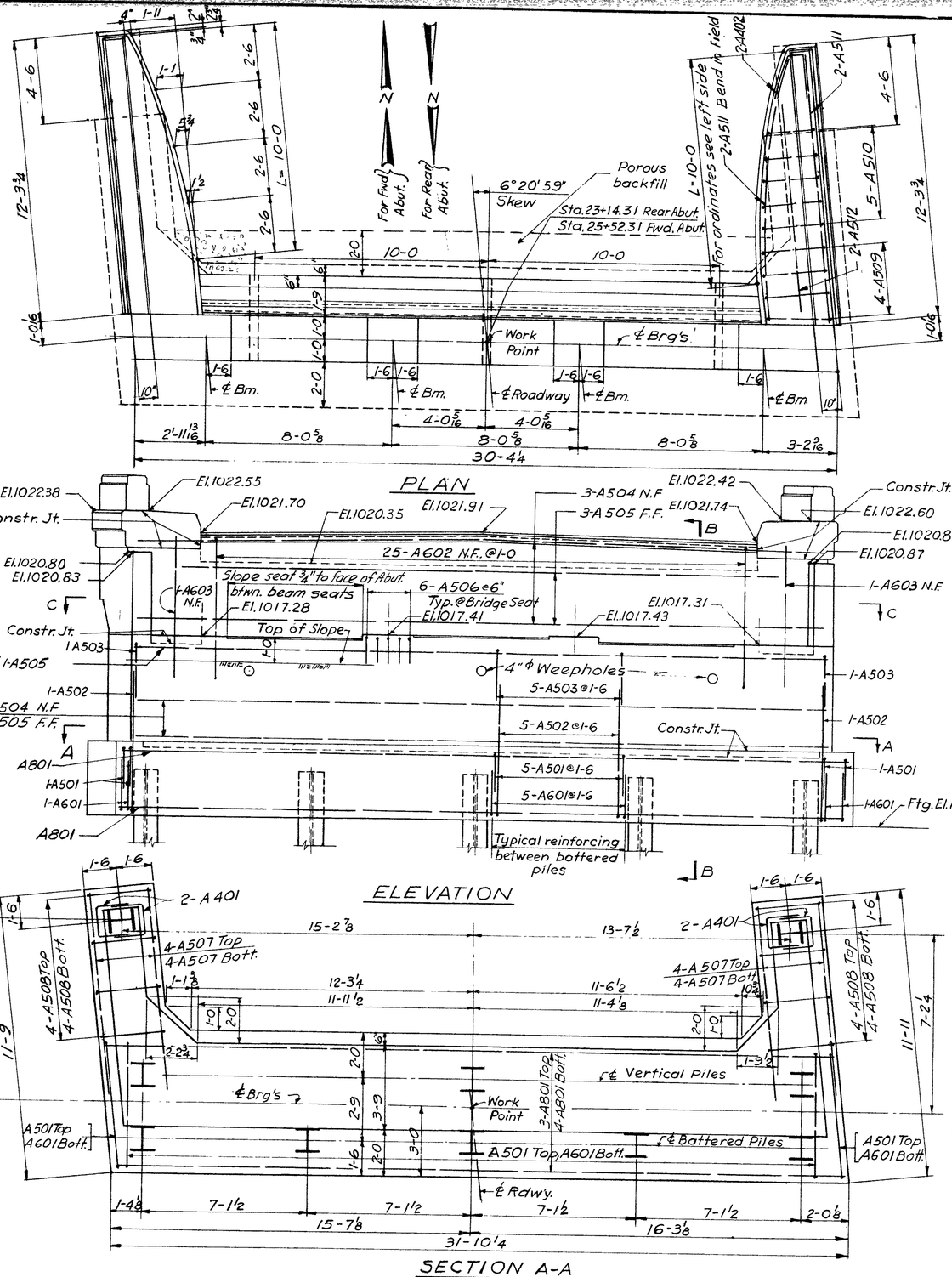
MONTGOMERY COUNTY I.R.-70
STA. 292 + 07.05

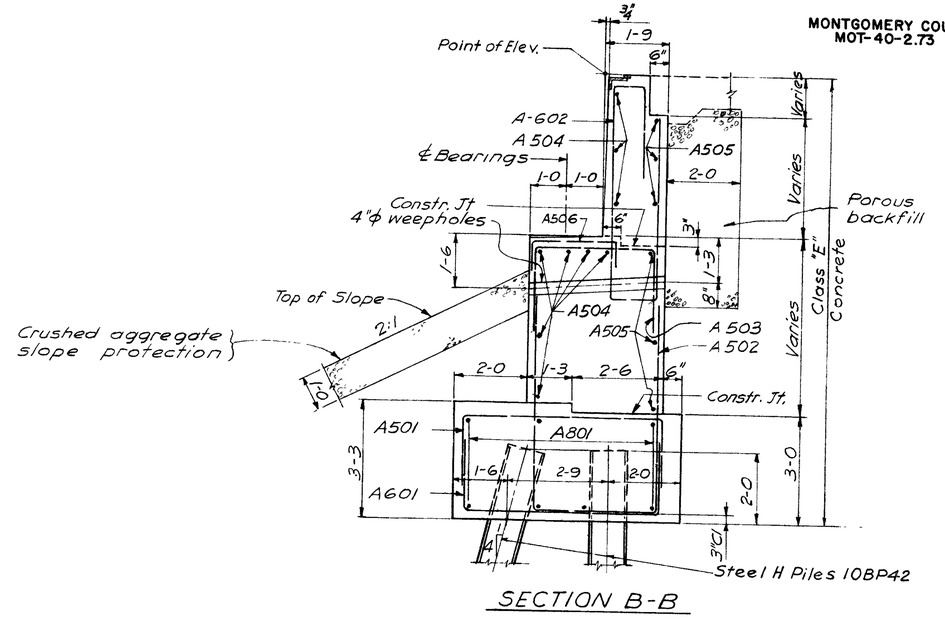
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V.B.		B.H.	K.A.	9/21/62	

SH. No.

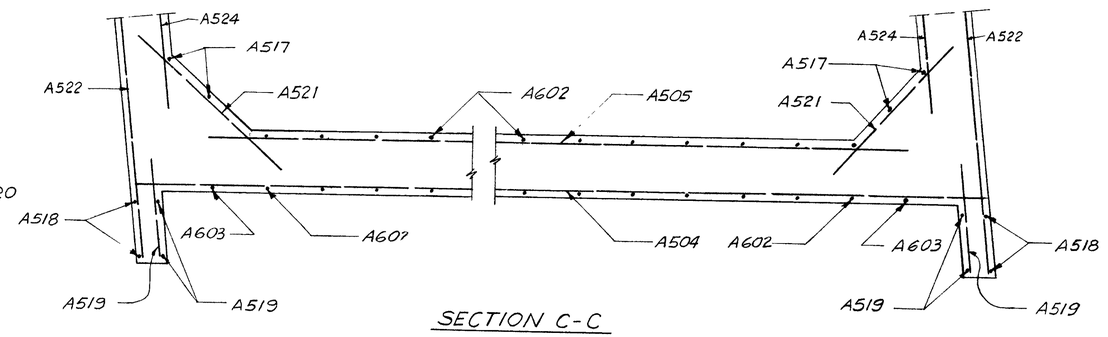
FED. RD. DIVISION	STATE	PROJECT		210
2	OHIO			

MONTGOMERY COUNTY
MOT-40-2.73





SECTION B-B



SECTION C-C

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and the piles driven.

NOTES:
1. Excavation for porous backfill, in excess of that required for construction of the abutments shall be considered as paid for in the bid price per cu. yd. for porous backfill.
2. For reinforcing steel details see sheet No. 214.
3. N.F. indicates near face.
   F.F. indicates far face.
   E.F. indicates each face

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ENGINEERS
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CHICAGO, ILLINOIS

ABUTMENT DETAILS
BRIDGE NO. MOT-40-0553
I.R-70 UNDER WELLBAUM ROAD

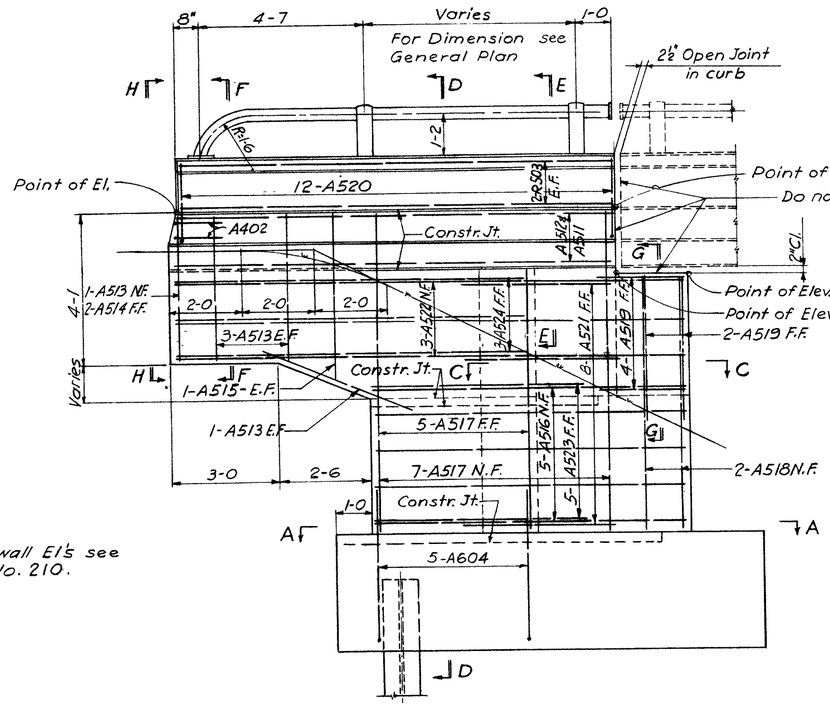
MONTGOMERY COUNTY — I.R-70 — STA. 292+07.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S.		B.H.	K.G. Gleiter		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

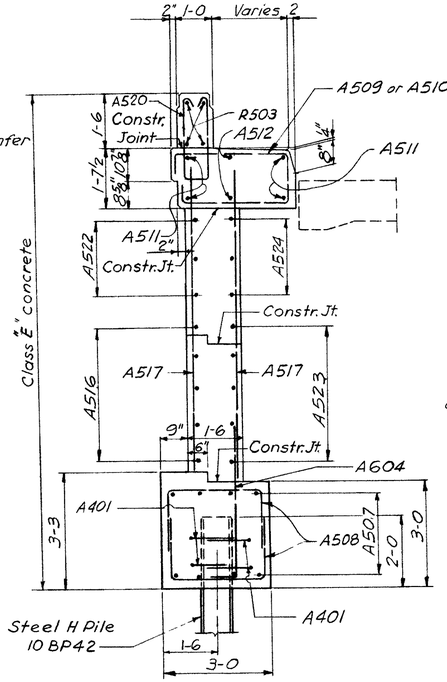
211

MONTGOMERY COUNTY
MOT-40-2.73

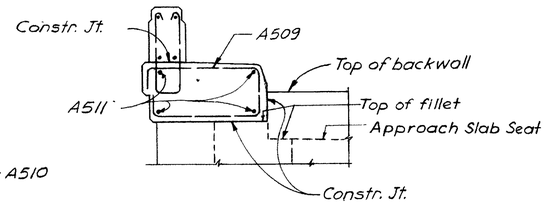


For Wingwall El's see Sheet No. 210.

ELEVATION



SECT. D-D



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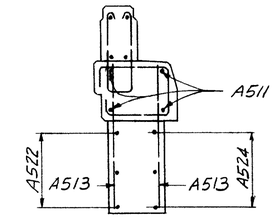
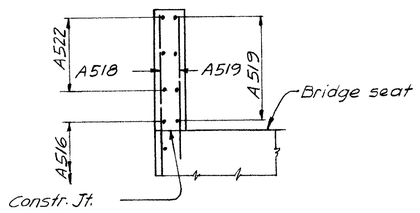
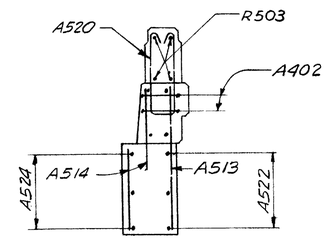


SECT. F-F



SECT. G-G



VIEW H-H

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

WINGWALLS
BRIDGE NO. MOT-40-0553
I.R.-70 UNDER WELLBAUM ROAD

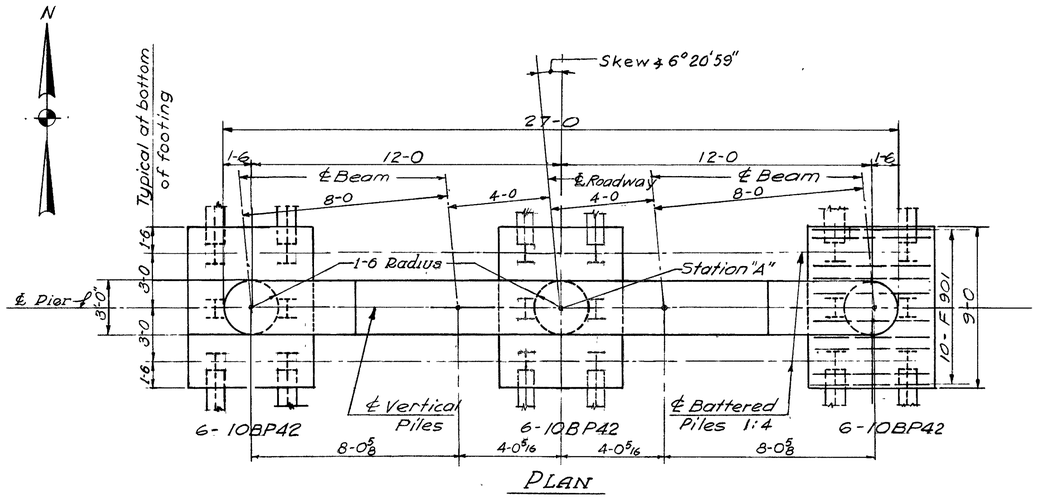
MONTGOMERY COUNTY I R-70
STA. 292 + 07.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HN	H.S.		B.H.	K.A.	9/21/62	

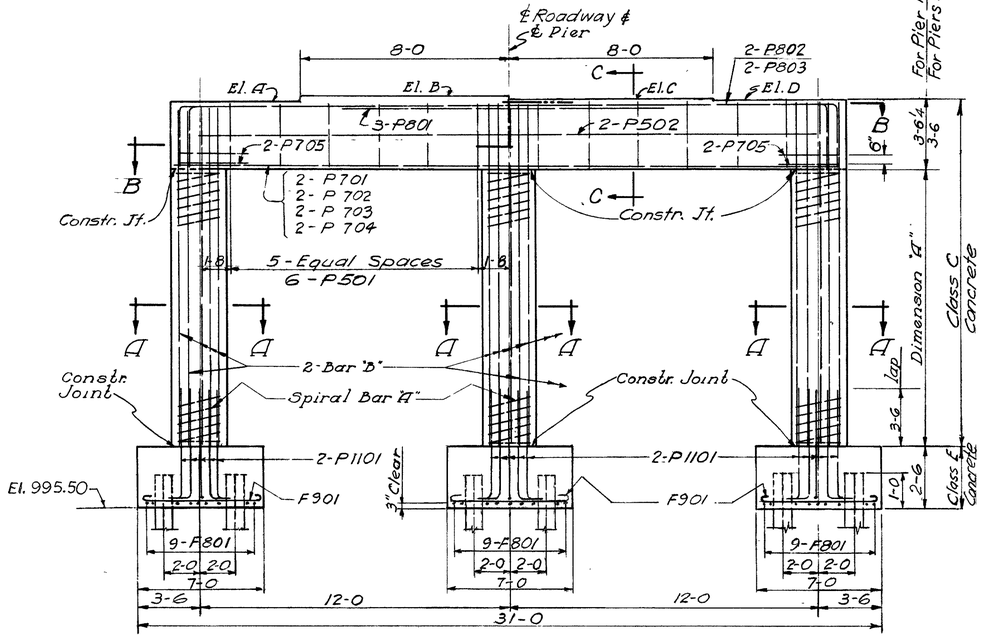
SH. N

FED. RD. DIVISION	STATE	PROJECT		212
2	OHIO			

MONTGOMERY COUNTE
MOT-40-2.73

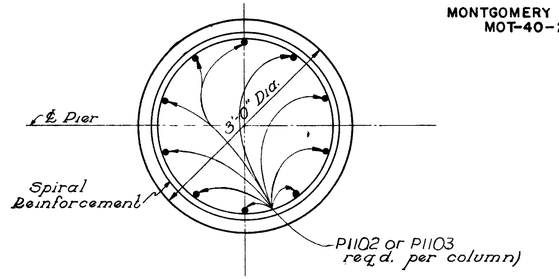


PLAN

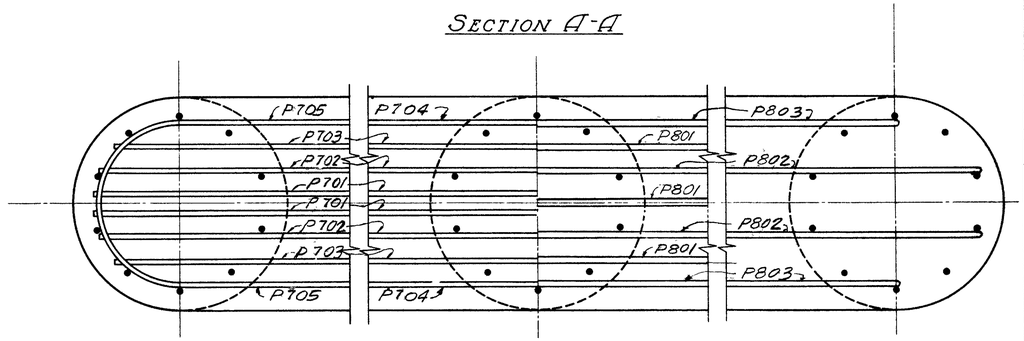


ELEVATION

	Station "A"	ELEVATION "A"	"B"	"C"	"D"		BAR "A"	"B"	DIMENSION "A"
Pier No. 1	23+63.31	1017.49	1017.61	1017.60	1017.47		SP401	P1102	15-11 5/8
Pier No. 2	24+33.31	1017.61	1017.73	1017.73	1017.61		SP402	P1103	16-1 3/8
Pier No. 3	25+03.31	1017.47	1017.60	1017.61	1017.49		SP401	P1102	15-11 5/8

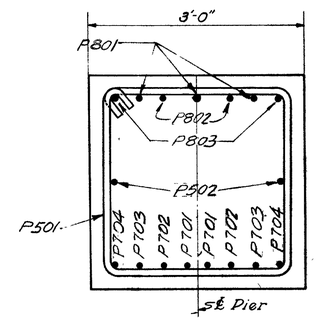


SECTION A-A



SECTION B-B

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat of Pier No. 2, so as to avoid interference with the drilling of anchor bar holes.



SECTION C-C

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

PIER DETAILS

BRIDGE NO. MOT-40-0553
I.R.-70 UNDER WELLBAUM ROAD
MONTGOMERY COUNTY I.R.-70
STA. 292 + 07.05

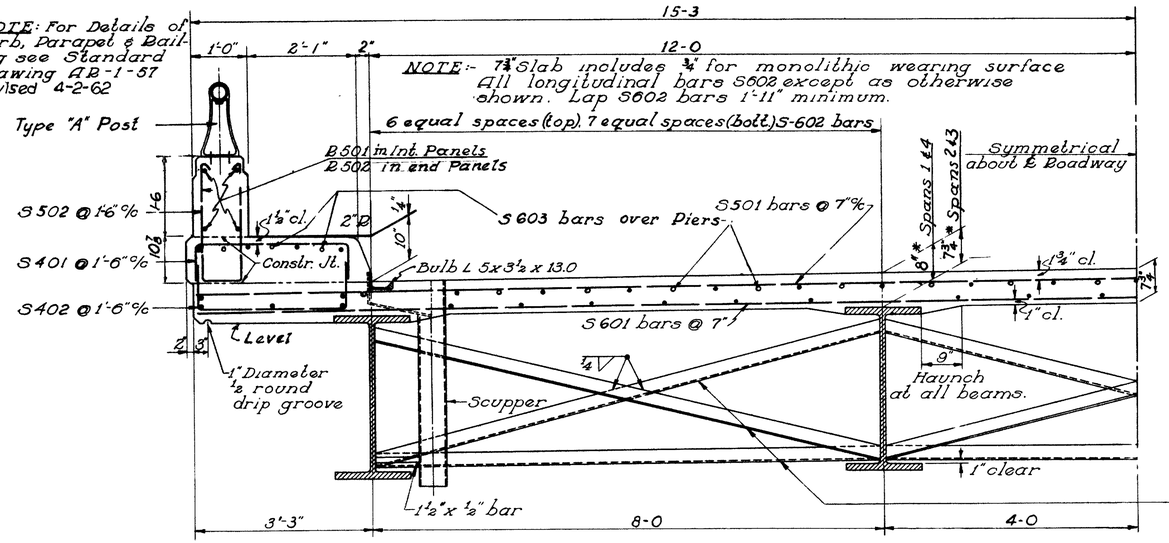
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V.B.		B.H.	K.A.	9/21/61	

Sh No 5

FED. RD. DIVISION	STATE	PROJECT		213
2.	OHIO			

MONTGOMERY COUNTY
MOT-40-2.73

NOTE: For Details of curb, Parapet & Railing see Standard Drawing AR-1-57 revised 4-2-62

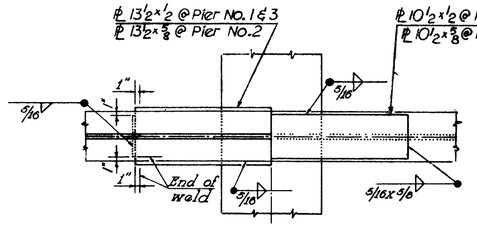


HALF TRANSVERSE SECTION

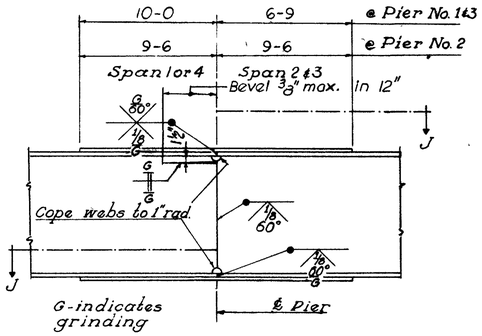
DEFLECTION AND CAMBER				
Location	Outside Beams		Inside Beams	
	Span 1 & 4	Span 2 & 3	Span 1 & 4	Span 2 & 3
Deflection due to Weight of Steel.	0	0	0	0
Deflection due to remaining dead load.	⅛"	⅜"	⅛"	¼"
Convexity required for vertical Curve	⅜"	⅞"	⅜"	⅞"
Sum of Deflections and Convexity.	½"	1¼"	½"	1⅛"
Required Camber	0	1¼"	0	1⅛"

NOTE:
* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.
Transverse reinforcing bars S501 and S601 Shall be placed parallel to the ℄ Piers.

Intermediate crossframe angles 3x3x5/16. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.



SECTION J-J



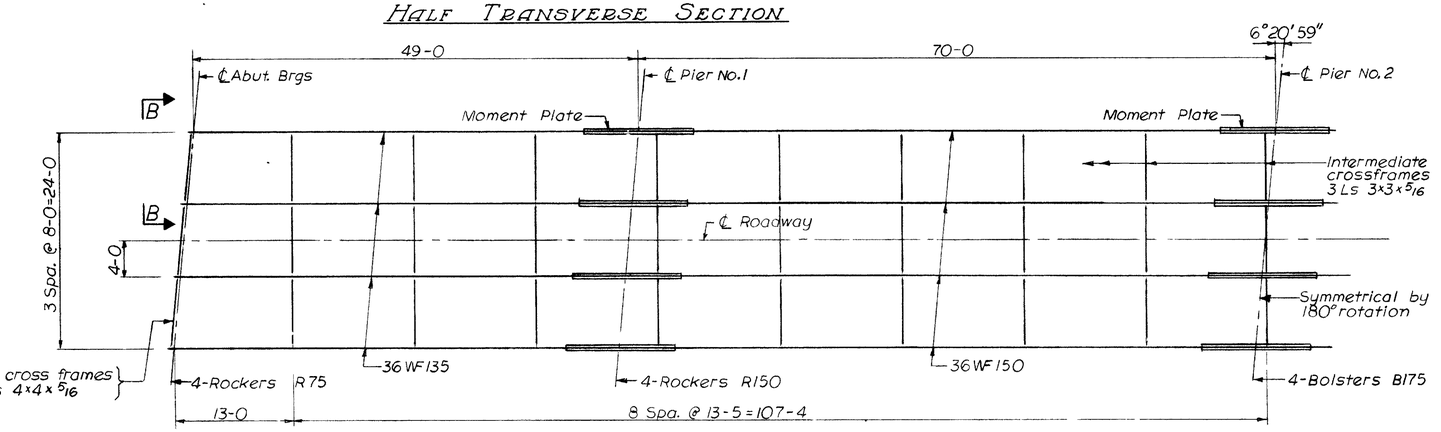
BEAM SPLICE DETAILS

NOTE:-
Splitting of the web shall be required for all beams differing in depth by more than ⅛"

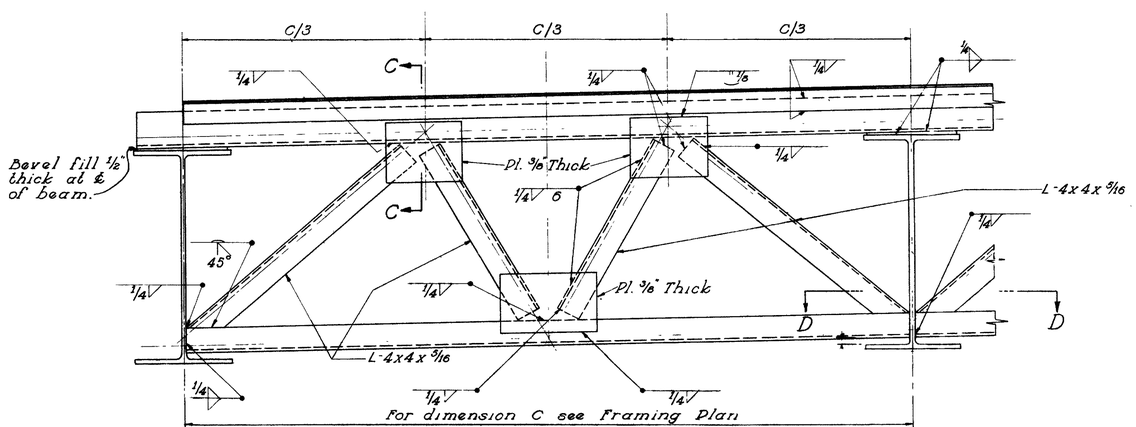
BEAM SPLICE WELDING PROCEDURE:
1. Raise end of beam at second pier ¾"
2. Butt weld beam flanges and web at first pier using the following sequence: make one pass on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates at first pier.
4. Lower end of beam at second pier.
5. Make splice at the second and succeeding pier in the same manner raising the end of the beam 1½" at the third pier and 0" at the abutment.

DECK SLAB HAUNCH:-
The haunch in the deck slab adjacent to the top of steel beams, which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12", except that the maximum slope shall not exceed 3" inches per foot. Payment for deck slab concrete shall be based on the 9" width.

Sole Plates for Abutment Rockers shall be sloped to follow the roadway gradient. Plates shall be 2½" thick at ℄ of rocker.



STEEL FRAMING PLAN



SECTION B-B

REFERENCES:-
Forend dam details, part plan & sections @ abutments, bridge roadway crown & diagram showing stagger of S603 bars over piers, see Std. Drwg. CSB-2-56, sh. #2 of 6, revised 2-2-59
For gutter & scupper details & curb plate details see Std. Drwg. CSB-2-56 sh. #3 of 6, revised 2-2-59.
For details of rockers & bolsters see Std. Drwg R.B-1-55, revised 2-2-59.

ADDITONAL NOTES: For additional notes see Sh. No. 209.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SUPERSTRUCTURE DETAILS
BRIDGE NO. MOT-40-0553
I.R.-70 UNDER WELLBAUM ROAD

MONTGOMERY COUNTY I.R.-70
STA. 292 + 07.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	V.B.		B.H.	K.A.	9/21/62	

SH. No. 6

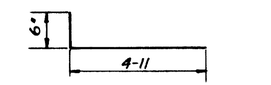
FED. RD. DIVISION	STATE	PROJECT		214
2	OHIO			

MONTGOMERY COUNTY
MOT-40-2.73

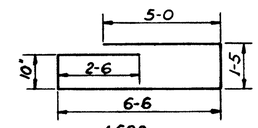
REINFORCING STEEL LIST

TWO ABUTMENTS

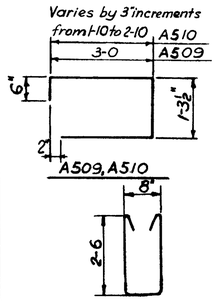
Mark	No. Req'd	Length	Type	Description	Weight
A801	14	31-5	S	Footing	1174
A601	48	8-11	B	Footing	643
A602	50	15-7	B	Backwall	1170
A603	4	5-9	S	"	34
A604	20	5-3	B	Footing	158
A501	48	8-10	B	Footing	442
A502	44	13-2	B	Abut.	604
A503	44	8-8	B	"	398
A504	18	29-11	S	"	562
A505	12	26-4	S	"	330
A506	48	4-9	B	Bridge seat	238
A507	32	8-0	S	Footing	267
A508	32	5-7	B	"	186
A509	16	7-3	B	Wingwalls	121
A510	4 SERIES OF 5	VARIES FROM 6-11 TO 4-11	B	"	123
A511	16	11-9	S	"	196
A512	8	10-0	S	"	83
A513	36	3-10	S	"	144
A514	8	2-1	S	"	17
A515	8	4-4	S	"	36
A516	20	8-5	S	"	176
A517	48	8-6	S	"	426
A518	8	7-3	S	"	60
A519	24	4-4	S	"	108
A520	48	5-9	B	"	288
A521	32	5-6	S	"	184
A522	12	13-10	S	"	173
A523	20	6-0	S	"	125
A524	12	9-6	S	"	119
R503	See	Superstructure Bar	List		
A401	16	5-4	B	Footing	57
A402	8	3-7	B	Curb	19

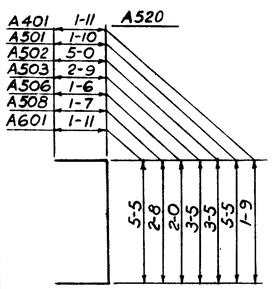


A604

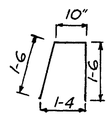


A602





A401, A501, A502, A503, A506, A508 & A601

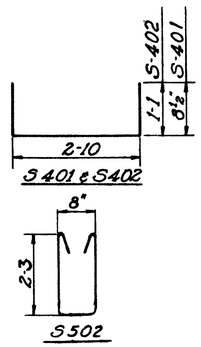


A402

REINFORCING STEEL LIST

SUPERSTRUCTURE

Mark	No. Req'd	Length	Type	Desc.	Weight
S601	411	30-4	S	Slab	18725
S602	371	35-10	S	"	19966
S603	72	28-0	S	"	3028
S501	411	30-4	S	Slab	13002
S502	320	5-10	B	Curb	1946
S401	320	4-0	B	Curb	855
S402	320	4-9	B	"	1015
R501	96	17-3	S	Parapet	*
R502	16	13-8	S	"	*
R503	16	11-8	S	"	*

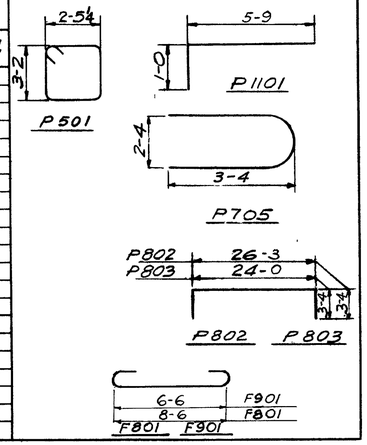


* to be included with railing for payment.

REINFORCING STEEL LIST

PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Length	Type	Weight
P501	12	12	12	11-9	B	441
P502	2	2	2	24-0	S	150
P701	2	2	2	26-4	S	323
P702	2	2	2	26-2	S	321
P703	2	2	2	25-10	S	317
P704	2	2	2	24-0	S	294
P705	4	4	4	8-0	B	196
P801	3	3	3	12-0	S	288
P802	2	2	2	32-7	B	522
P803	2	2	2	30-4	B	486
P1101	30	30	30	6-6	B	3,108
P1102	30	—	30	19-2	S	6,110
P1103	—	30	—	19-4	S	3,081
F801	27	27	27	10-8	B	2,307
F901	30	30	30	9-0	B	2,754



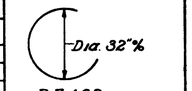
SPIRAL REINFORCING STEEL LIST FOR PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Core Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	3		3	32"	15-11⅝	4½"	46	1780
SP402		3		32"	16-1⅜	4½"	46	893

REINFORCING STEEL LIST

REPLACEMENT BARS

Mark	No. Req'd.	Length	Type	Weight
RE401	1	5-3	S	
RE402	1	5-3	B	
RE501	2	5-7	S	
RE601	3	5-11	S	
RE701	1	6-2	S	
RE801	1	6-6	S	
RE901	1	6-10	S	
RE1101	1	7-6	S	



RE402

* Replacement for spiral reinforcing bar shall not have deformations but shall in other respects conform to Item 3-4.

NOTE:
Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used, indicate the bar size number. For example, P501 is a No. 5 size bar and P1101 is a No. 11 size bar.

SPIRAL REINFORCING BARS

The Length shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown in the steel list for the spiral bars is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 3-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

REINFORCING STEEL DETAILS
BRIDGE NO. MOT-40-0553
I.R.-70 UNDER WELLBAUM RD.
MONTGOMERY COUNTY I.R.-70
STA. 292 + 07.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N	V.B.		B.H.	K.A.	9/21/60	

Sh. No. 7

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-70-1(15)20	

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MONTGOMERY COUNTY
MOT-40-2.73

CURVE DATA
for Brookville-Salem Rd.

T.S = 56+89.05
P.I = 59+75.46
S.C. = 58+39.05
C.S. = 61+10.61
S.T = 62+60.61
Δ = 10°23'20"
D = 2°30'
L_s = 150'
θ_s = 1°52'30"
T_s = 286.41'
L_c = 271.56'
X_c = 149.98'
Y_c = 1.64'
Superelevation = 0.041'/'

N

42' Paved Shoulders
Pavement 40 12-0 12-0 10-0 5-0
℄ Westbound Lanes
℄ I.R. 70
℄ Eastbound Lanes
Pavement 5-0 10-0 12-0 12-0 4-0
6:1
2:1
312 988.2
313 988.4
314 986.7
315 985.0
316 982.1

3 Circuit 109 Iron Wire (6-wire)
GENERAL TELEPHONE Co.

Sta. 313+86.32 ℄ I.R. 70
Sta. 65+09.96 ℄ Brookville-Salem Road

Design Clearance
Actual Clearance
14-0
14-0¾

Limits of Crushed Aggregate Slope Protection

Frame Barn
Gravel Drive
℄ Shed

◆ = Drive Rod Penetration Test
⊕ = Drive Sample Boring.

B-9 B-4

12" C.M.P.
Begin Approach Slab Sta. 66+97.97
M.B.
BROOKVILLE - SALEM ROAD

Critical Clearance Point "A"
15'-7"
39° 52' 30"
Skew: 50°07'30"

Existing Road
S.T. +60.61
℄ Brookville - Salem Road
End Approach Slab Sta. 63+21.95
12" Tile

62 993.4
63 991.8
64 989.3
65 989.6
66 989.1
67 988.7
68 988.6

3℄ 12,000 Volt distribution pole line (6-wire)
DAYTON POWER & LIGHT Co.
℄ 12" Pipe
Gravel Drive
Limits of Crushed Aggregate Slope Protection

Frame Garage
2 Story Brick Residence
Br. Shed
2 sty. Br. Cellar
Sta. 63+21.95

Bridge Limits

1011.31
1011.87
1012.26
1012.51
1012.60
H.P. Sta. 64+04.41
El. 1012.605
k = 3.0909 × 10⁻⁵
1012.54
1012.32
P.V.I. Sta. 65+50.00
El. 1021.30
L.V.C. = 1100'
1011.42
1010.74
1009.80
Sta. 66+97.97

+2.5%
-4.3%
1011.95
2:1 Normal
(Design Clearance 16-6
(Actual Clearance 16-6¾
℄ Point "A"

Existing Ground
Ftg. El. 998.84
Steel H Bearing Piles 10BP42
The estimated average pay length of piles 25 ft.
(Typ. for both abutments)
Ftg. El. 985.45
Ftg. El. 984.60
Ftg. El. 983.75
Steel H Bearing Piles 10BP42
The estimated average pay length of piles 19 ft.
(Typ. for all piers)
Ftg. El. 996.20

PROFILE on ℄ BROOKVILLE - SALEM Road

62+00 63+00 64+00 65+00 66+00 67+00

FOUNDATION SOUNDINGS:

Foundation design & foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information, the accuracy of which the State does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus or in the Division office.

PROPOSED STRUCTURE

Type: 4-span continuous steel girders with reinforced concrete deck and reinforced concrete substructure.
Spans: 76-0; 108-6; 108-6 & 76-0 c. to c. bearings
Roadway: 30-0 with 2-3 safety curbs.
Load Frequency: C.F. = 130 (57)
Skew: 50°07'30" Rt. Fwd.
Wearing Surface: ¾ Monolithic concrete.
Approach Slabs: A.S.-1-54 (25'-Long)
Alignment: Tangent.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SITE PLAN
BRIDGE NO. MOT-40-0594
I.R.-70 under BROOKVILLE SALEM RD.

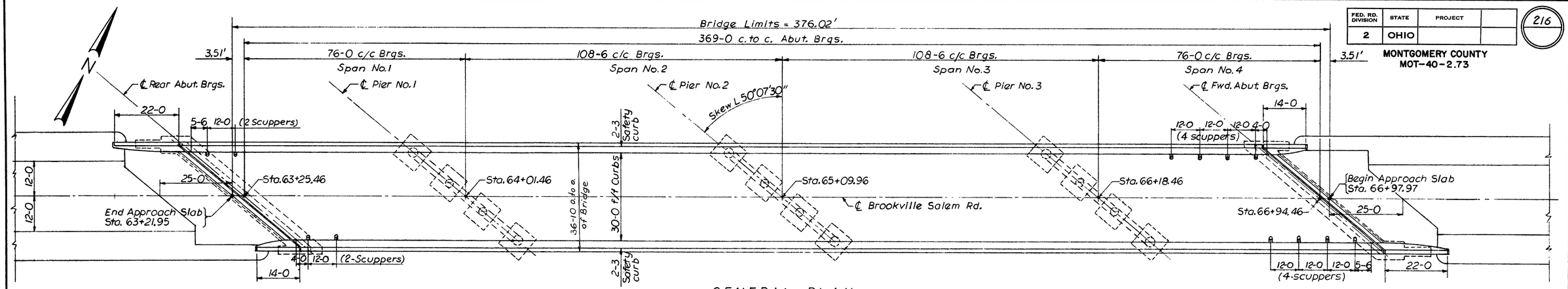
MONTGOMERY COUNTY — I.R.-70
SEC. MOT-40-2.73 — STA. 313+86.32
SCALE 1"=20'

DESIGNED	DRAWN	CHECKED			Revised
H.N.	B.B.	H.N.			L.E.L. 2/9/62

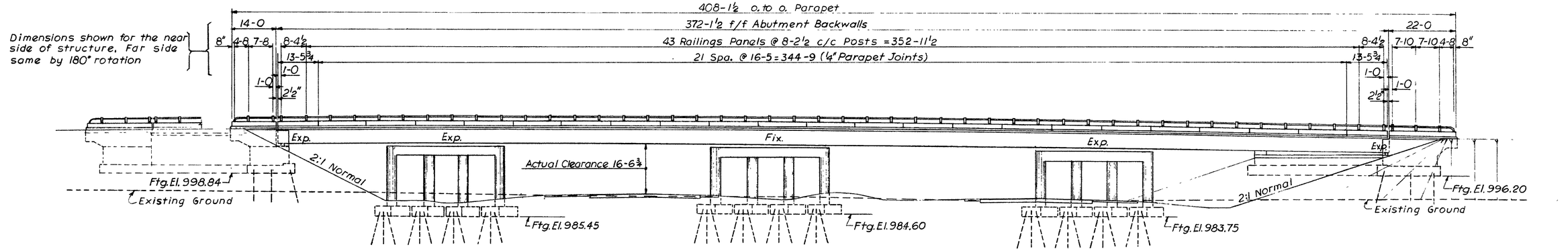
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

216

MONTGOMERY COUNTY
MOT-40-2.73



GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Gen.	Super.	Piers	Abut.
E-2	606	Cu.Yds.	Unclassified Excavation			265	341
S-1	387	Cu.Yds.	Class "C" concrete, superstructure		387		
S-1	106	Cu.Yds.	Class "C" concrete, piers above footings			106	
S-1	247	Cu.Yds.	Class "E" concrete, abutments				247
S-1	89	Cu.Yds.	Class "E" concrete, pier footings			89	
S-16	Lump	Sum	First test pile	Lump			
S-18	2800	Lin.ft.	Steel piles, 10BP42			2050	750
S-4	155,541	Lbs.	Reinforcing steel		103,321	37,448	14,772
S-7	415,500	Lbs.	Structural steel		415,500		
S-8	415,500	Lbs.	Field painting of structural steel		415,500		
S-14	816.25	Lin. Ft.	Railing Type "A" (aluminum rail & supports, concrete parapet)		816.25		
S-29	52	Cu.Yds.	Porous backfill				52
S-29	12	Each	Scuppers		12		
I-10	667	Sq.Yds.	Crushed aggregate slope protection	667			
Special	387	Each	Water-reducing, set-retarding admixture *		387		

* See proposal note.

GENERAL NOTES

REFERENCE shall be made to Standard Drawings RB-1-55 revised 2-2-59, AR-1-57 revised 4-2-62 and CSB-2-56 Sheets 2 and 3 revised 2-2-59, and to Supplemental Specification No. S-20710 dated 4-25-61 and No. S-307 dated 8-23-60

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

SHOP PAINTING STEEL. The surface preparation of all steel, requiring shop painting as per the Plans & Specifications, shall be accomplished by blast cleaning or power tool cleaning, except as noted in the Specifications regarding the use of Chromate Primers.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel & are located near the center of any span.

SURFACE FINISH OF CONCRETE: The requirements of Sec. S-1.22, Rubbed Finish, shall apply to the following exposed concrete surfaces:

a. The entire superstructure except the top & bottom surfaces of curbs & roadways.
b. The entire surface of piers & abutments except bridge seats, backwalls & the face of spill-through abutments between outside beams

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

SHEET LEAD shall conform to the requirements of ASTM Designation B29 without restriction to the Common Desilverized type.

UTILITY LINES: All expense involved in relocating (installing) the affected utility lines shall be borne by the owners. The contractor and Owners are requested to cooperate by arranging their work in such manner that inconvenience to either will be held to a minimum.

PIER PILES shall be driven to firm contact with rock. If length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:
50 tons per pile using an 11000 ft. lb. hammer.
43 tons per pile using a 15000 ft. lb. or greater hammer.
If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation.
The design load is 35 tons per pile.

ABUTMENT PILES shall be driven to a minimum bearing capacity of 21 tons per pile.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

GENERAL PLAN
BRIDGE NO. MOT-40-0594
I.R.-70 UNDER BROOKVILLE-SALEM RD.

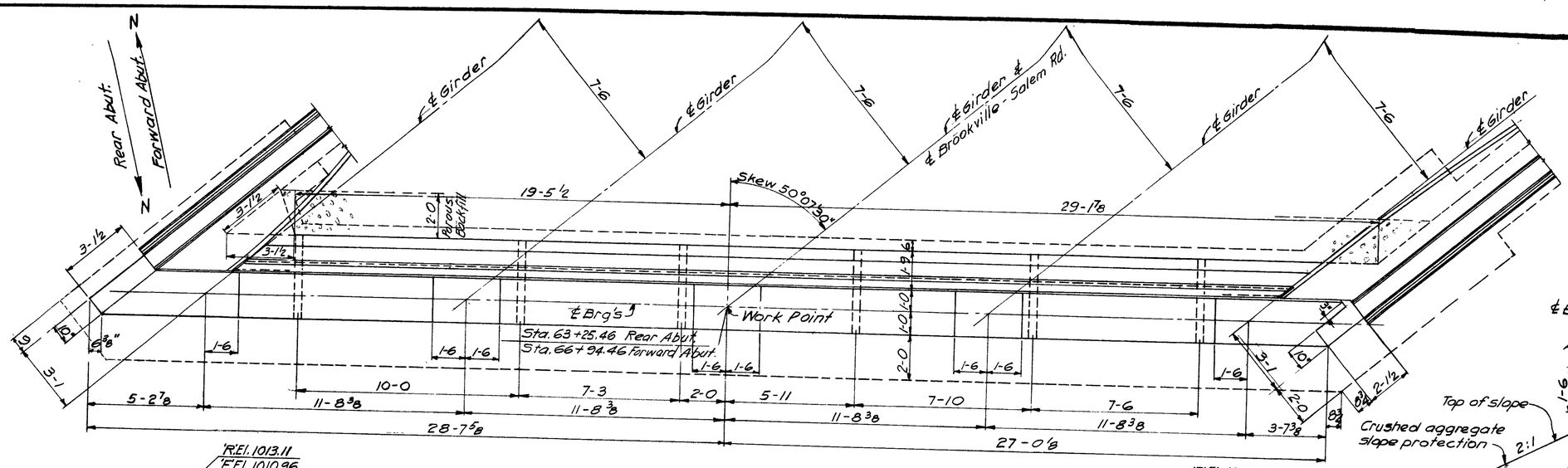
MONTGOMERY COUNTY — I.R.-70 STA. 313 + 86.32

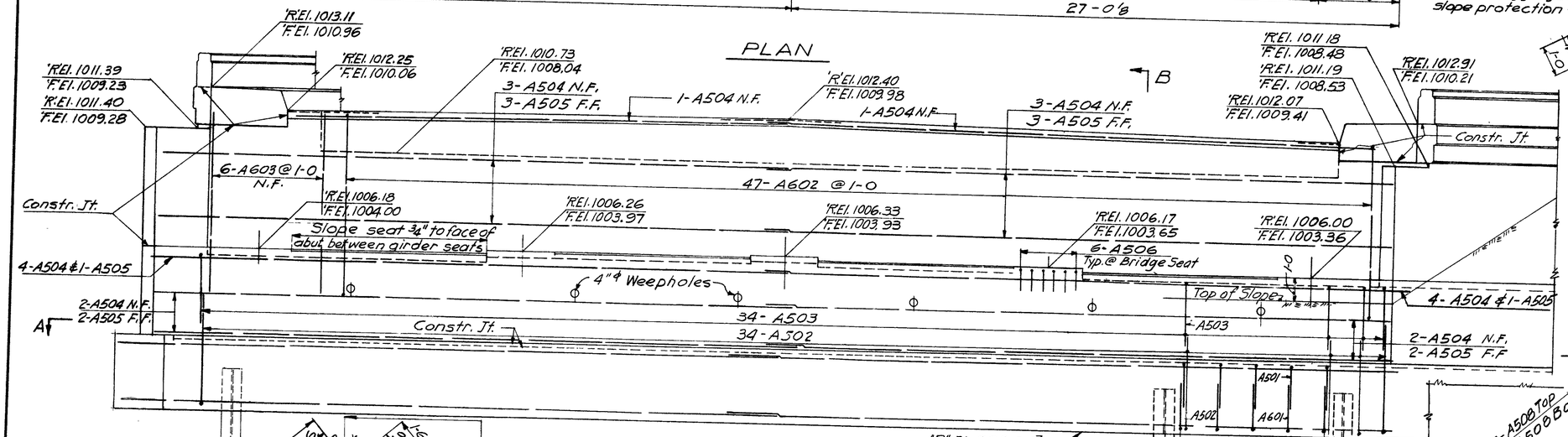
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B.		B.H.	K.A.	6-26-62	

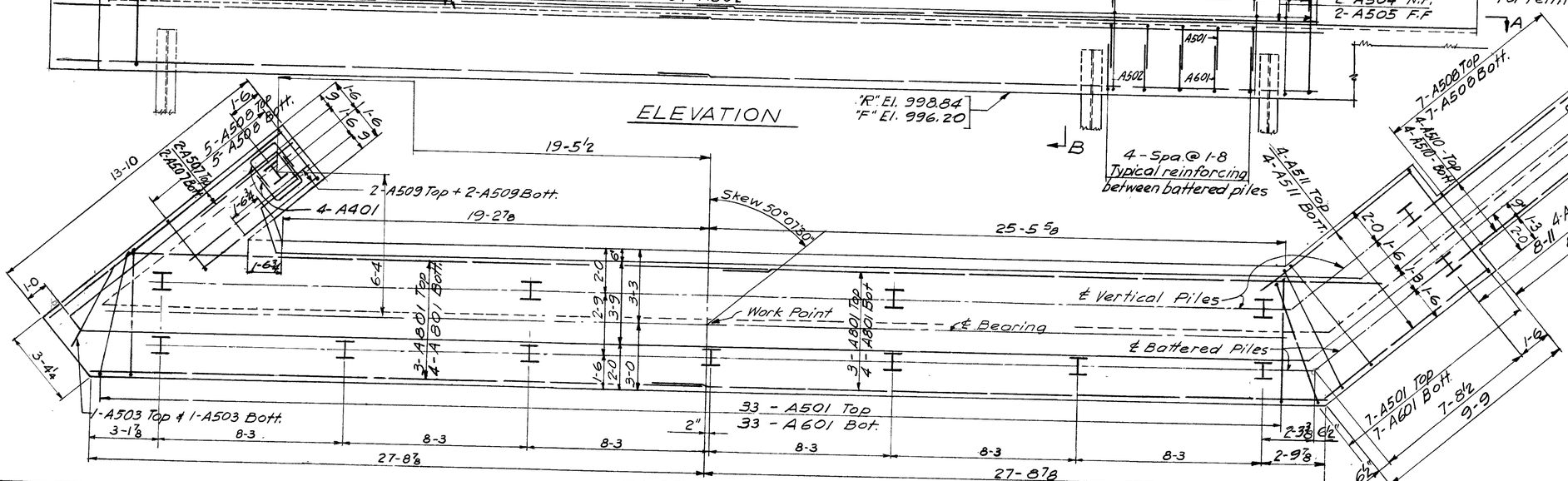
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

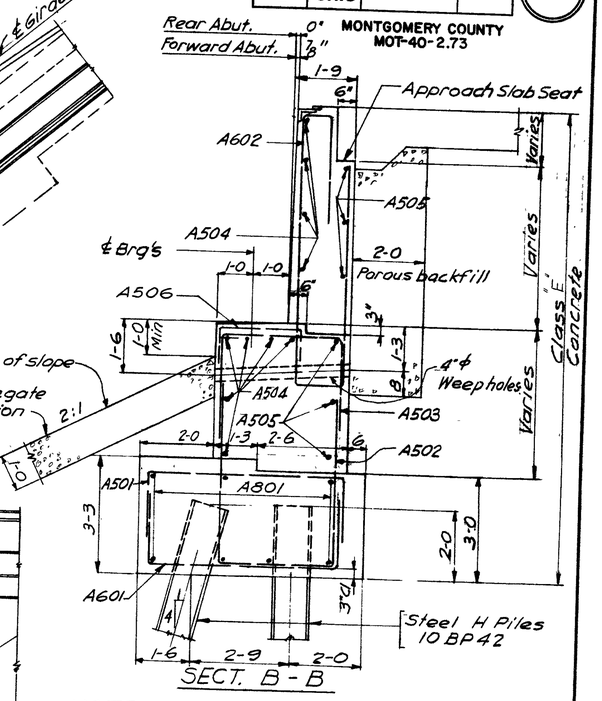
217

MONTGOMERY COUNTY
MOT-40-2.73









NOTES:

EXCAVATION for porous backfill, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per Cu. Yd for porous backfill.
For reinforcing steel details see sheet No. 223.

PROCEDURE:

The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment and the piles driven.

NOTES:

N.F. - indicates Near Face reinforcing
F.F. - indicates Far Face reinforcing
'R' El's refer to Rear Abutment
'F' El's refer to Forward Abutment

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

ABUTMENT DETAILS

BRIDGE NO. MOT-40-0594

I.R.-70 UNDER BROOKVILLE-SALEM RD.

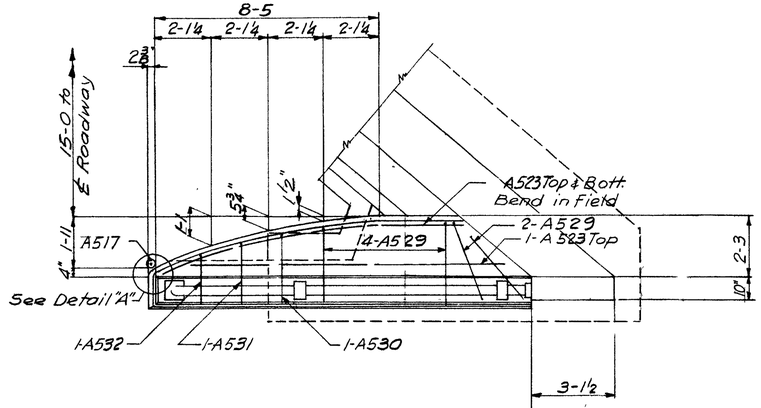
MONTGOMERY COUNTY — I.R.-70 STA. 313+86.32

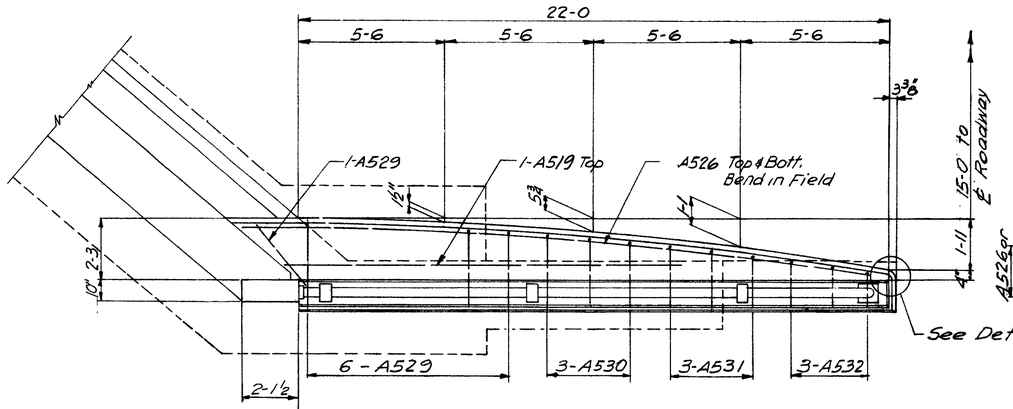
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED

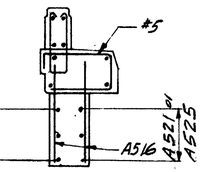
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

218

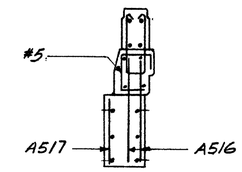
MONTGOMERY COUNTY
MOT-40-2.73



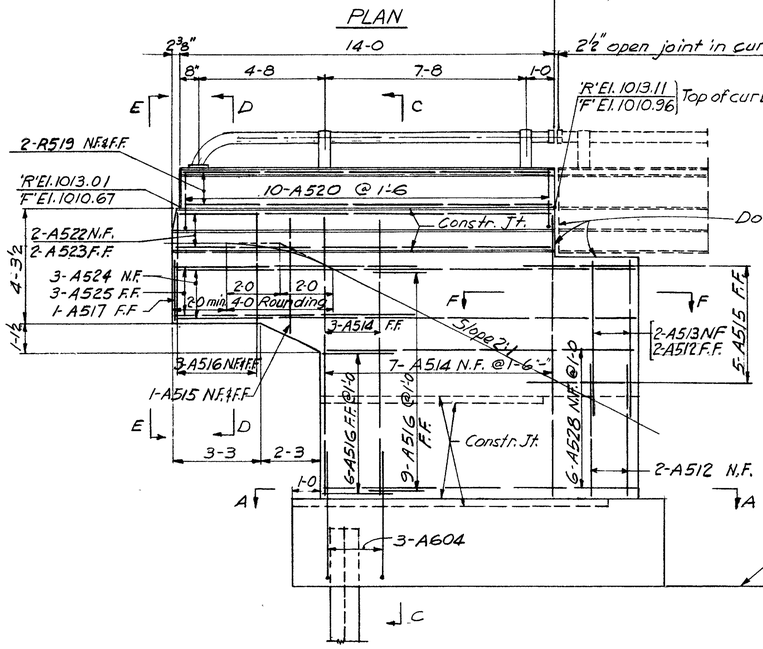




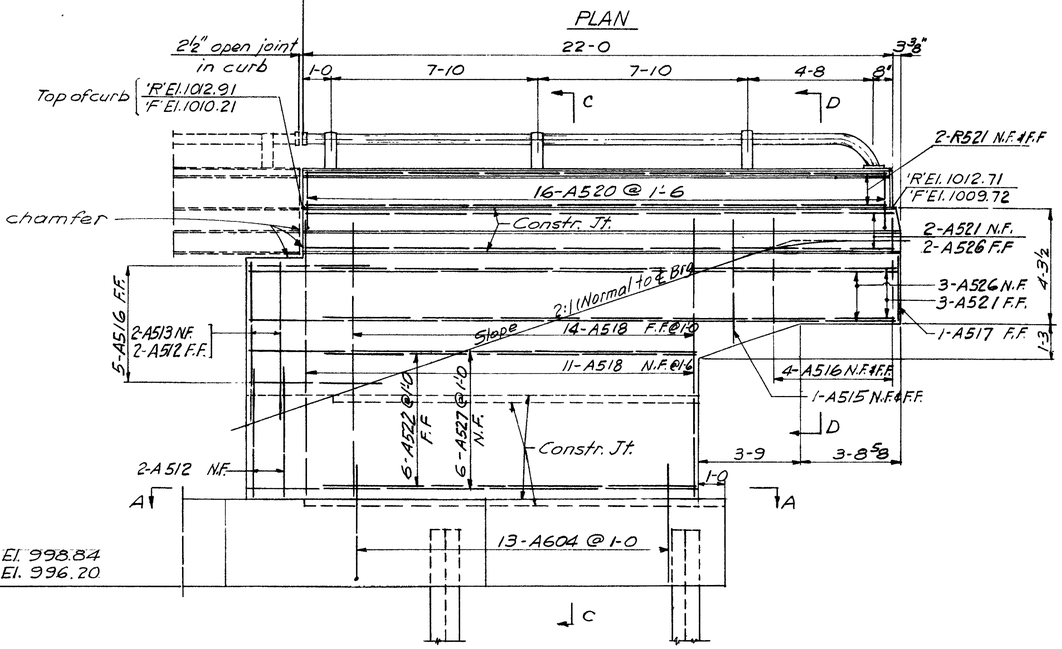
SECT. D-D



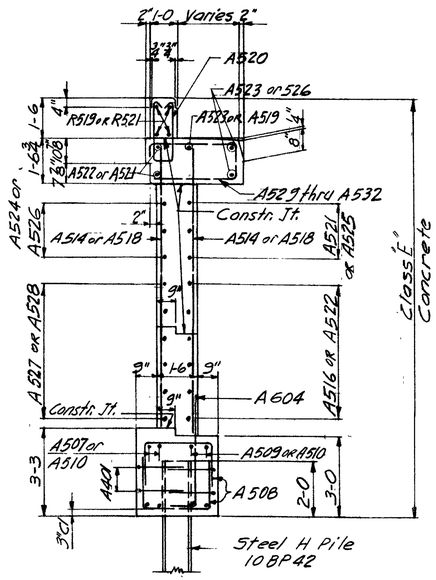
VIEW E-E



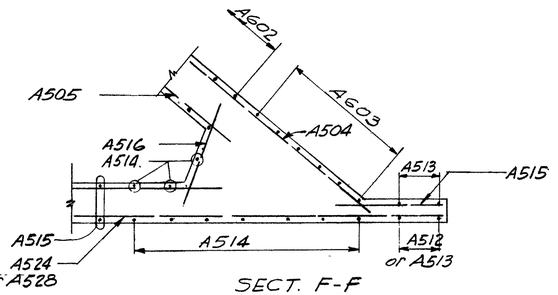
ELEVATION
RIGHT WING WALL - REAR ABUTMENT
LEFT WING WALL - FORWARD ABUT.



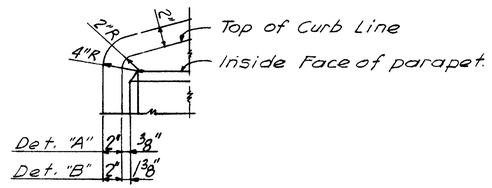
ELEVATION
LEFT WING WALL - REAR ABUTMENT
RIGHT WING WALL - FORWARD ABUT.



SECT. C-C



SECT. F-F



DETAIL "A" As Shown
DETAIL "B" Opp. Hand

For notes see Sh. No. 217.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

WINGWALLS
BRIDGE NO. MOT-40-0594
I.R-70 UNDER BROOKVILLE-SALEM RD.

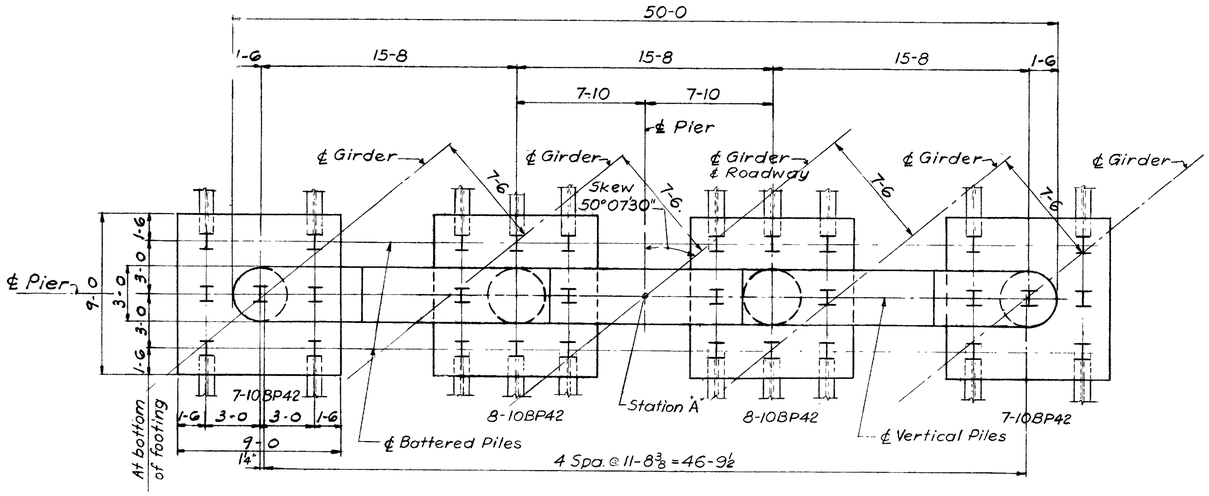
MONTGOMERY COUNTY I.R-70
STA. 313+86.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N	H.S.		B.H.	KG	6-22-66	

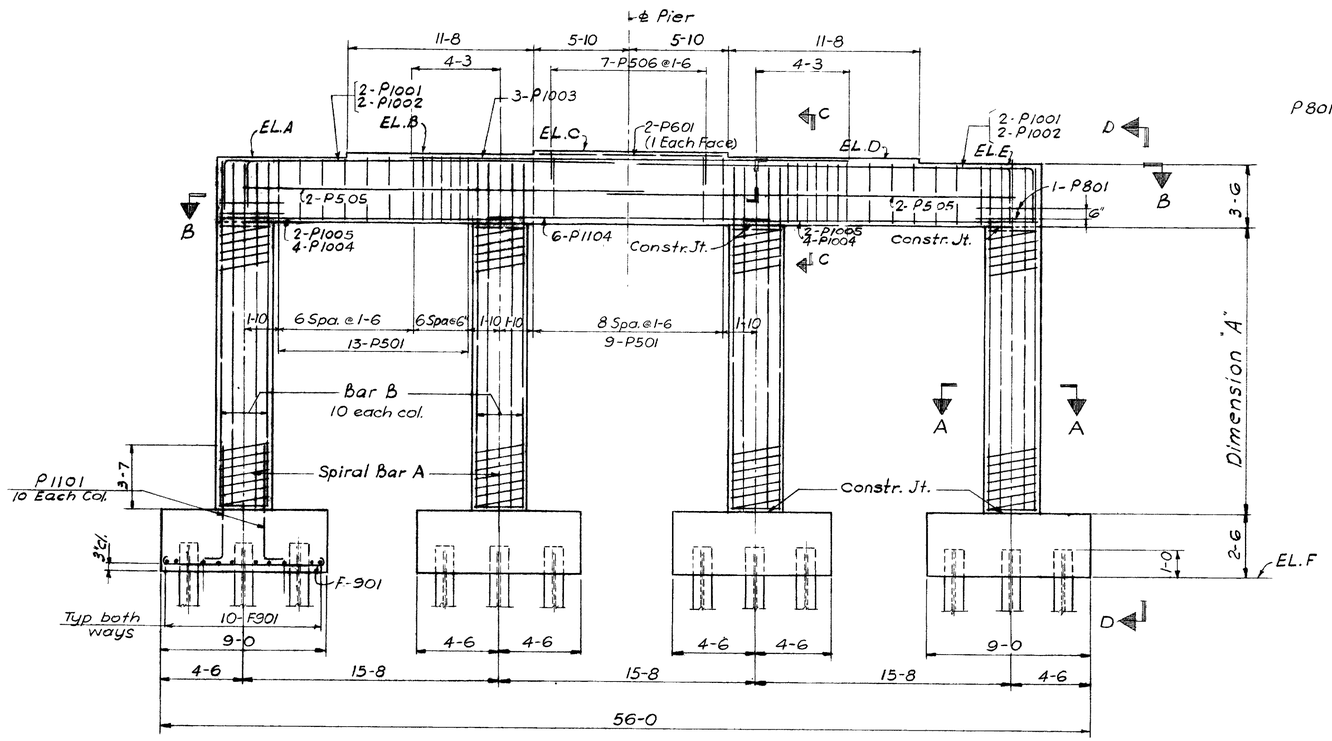
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

219

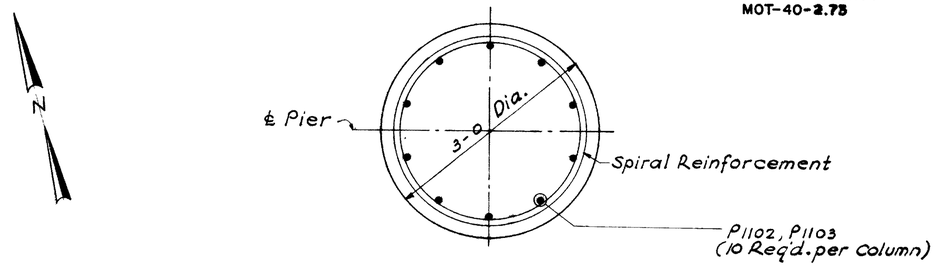
MONTGOMERY COUNTY
MOT-40-2.75



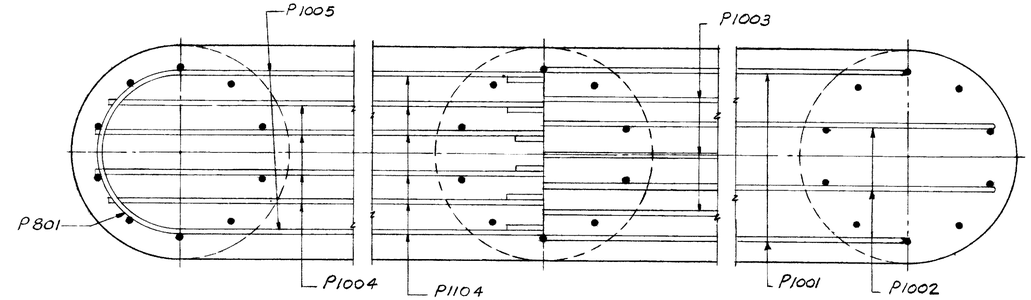
PLAN



ELEVATION



SECTION A-A

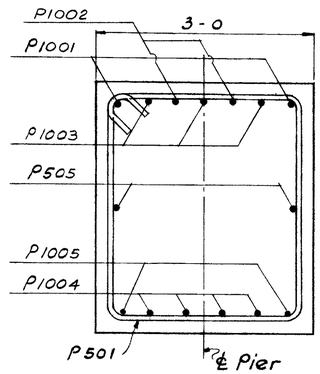


SECTION B-B

NOTES: BRIDGE SEAT REINFORCING
Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat of Pier No. 2, so as to avoid interference with the drilling of anchor bar holes.

SYMMETRY: All pier details and reinforcement are symmetrical about the center line of the pier, unless otherwise noted.

For view D-D see Sheet No. 220.



SECTION C-C

PIER	STATION A	ELEVATION A	B	C	D	E	F		BAR A	B	DIMENSION A
PIER No.1	64+01.46	1005.69	1005.82	1005.94	1005.82	1005.70	985.45		SP401	P1102	14-3
PIER No.2	65+09.96	1005.37	1005.44	1005.50	1005.32	1005.14	984.60		SP402	P1103	14-6 1/2

H.W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

PIER NO. 1 & 2 DETAILS

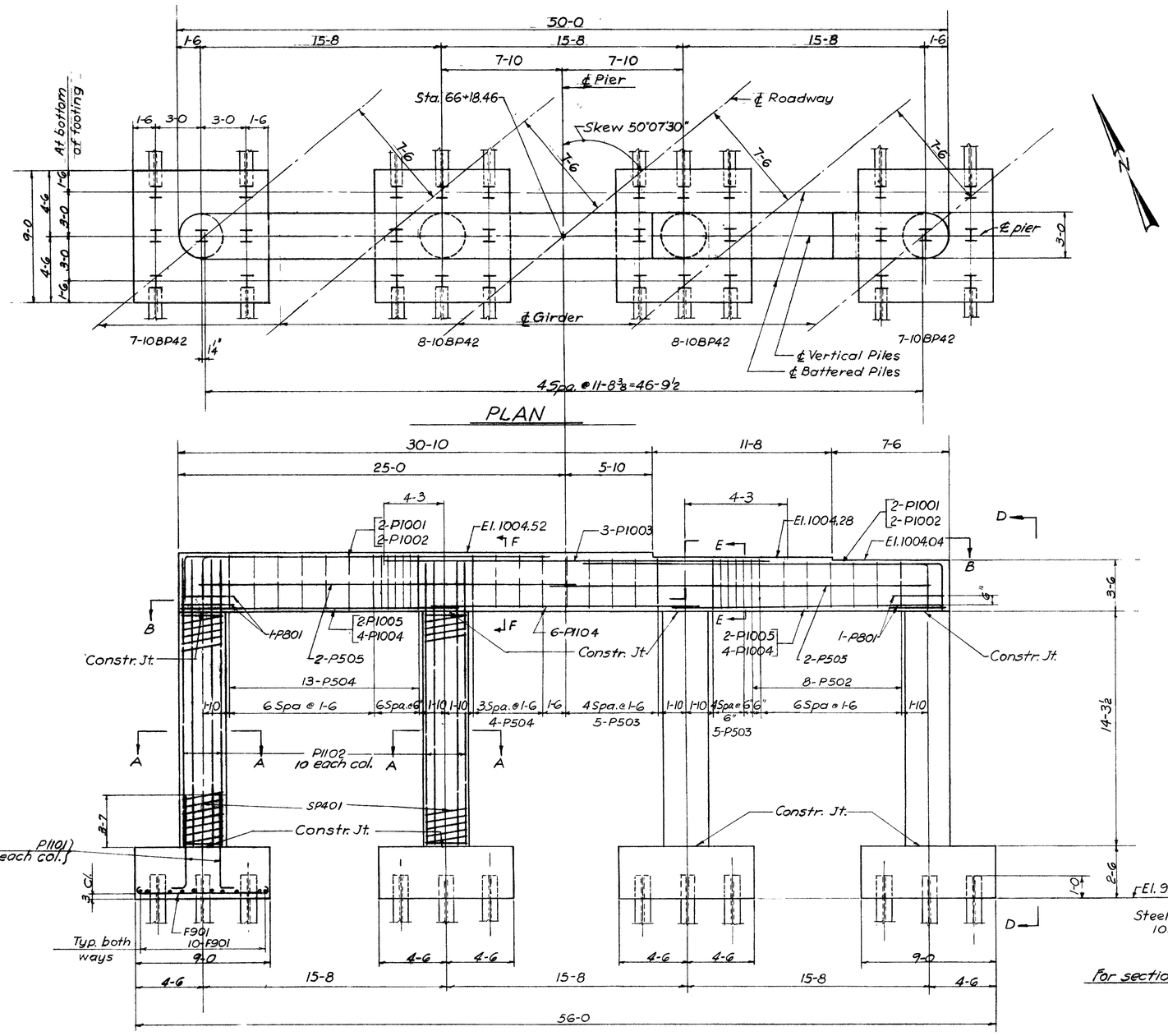
BRIDGE NO. MOT-40-0594
I.R.-70 UNDER BROOKVILLE SALEM RD.

MONTGOMERY COUNTY I.R.-70
STA. 313 + 88.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	B.B.		B.H.	K.O.	6-26-62	

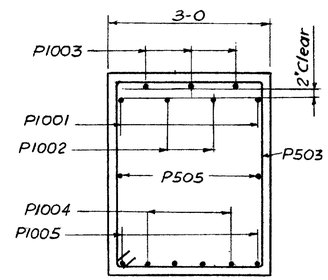
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MONTGOMERY COUNTY
MOT-40-2 73

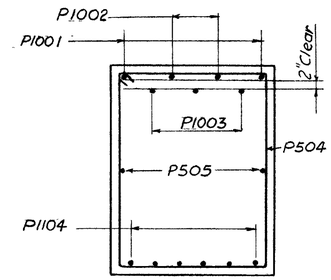


For sections "A-A", "B-B" & pier notes see Sheet No 219.

ELEVATION



SECTION E-E



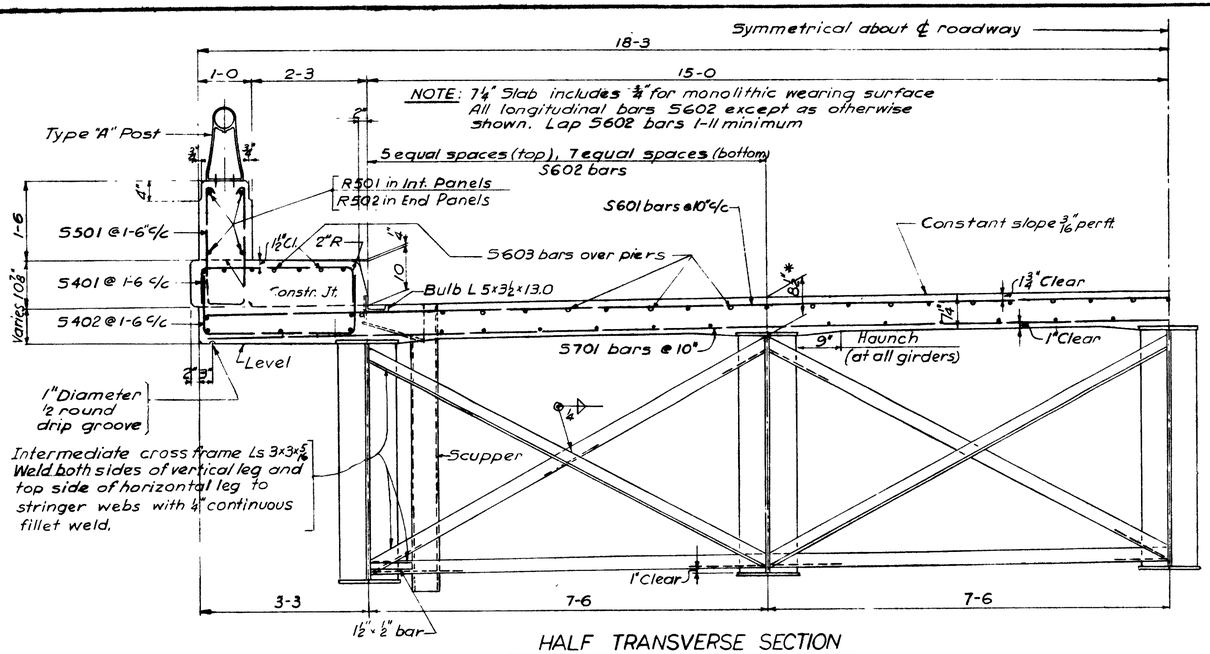
SECTION F-F

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

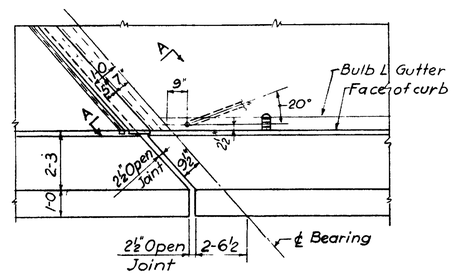
PIER NO. 3 DETAILS

BRIDGE NO. MOT-40-0594
I.R-70 UNDER BROOKVILLE-SALE
MONTGOMERY COUNTY I.R-70
STA 313+8

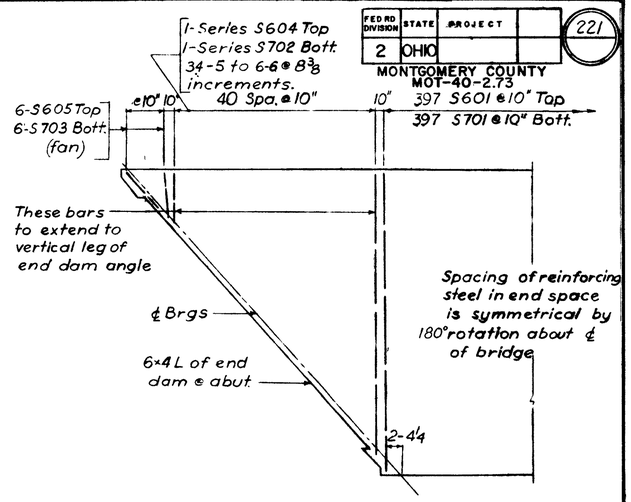
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
	B.B.		B.H.	K.G.	6-26-6



HALF TRANSVERSE SECTION

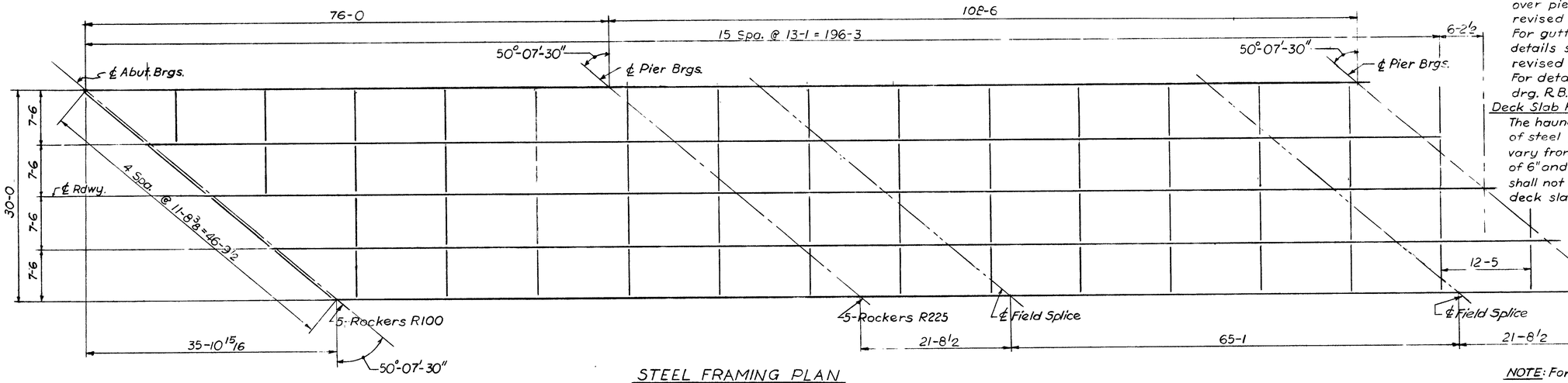


PART PLAN AT ABUTMENT



PLAN AT ABUTMENTS

NOTE*
This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of girder may not have the exact camber or conformation required to place it parallel to the finished grade.



STEEL FRAMING PLAN

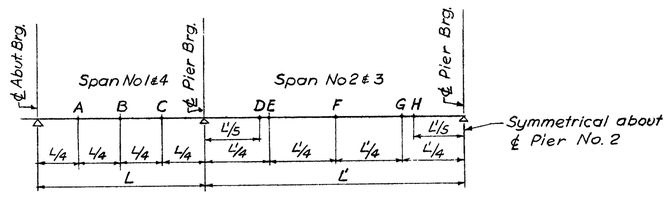
REFERENCES
For section A-A at abutment; end dam details, bridge roadway crown and diagram showing stagger of S603 bars over piers, see Std. Drwg. CSB-2-56, sh. #2 of 6, revised 2-2-59.
For gutter and scupper details and curb plate details see Std. Drwg. CSB-2-56 sh. #3 of 6, revised 2-2-59.
For details of rockers and bolsters see std. drg. R B.-1-55, revised 2-2-59.

Deck Slab Haunch:-
The haunch in the deck slab adjacent to the top of steel girders, which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12", except that the maximum slope shall not exceed 3" inches per foot. Payment for deck slab concrete shall be based on the 9" width.

NOTE: For Additional Notes see Sheet No. 216.

DEFLECTION AND CAMBER

Location	Outside Girders								Inside Girders							
	Span No 1 & 4			Span No 2 & 3					Span No 1 & 4			Span No 2 & 3				
	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H
Deflection due to Weight of Steel	0	1⅝	0	1⅝	1⅝	1¼	1⅝	1⅝	0	1⅝	0	1⅝	1⅝	1¼	1⅝	1⅝
Deflection due to Remaining Dead Load	⅜	⅜	⅛	⅜	½	⅞	½	⅜	¼	¼	⅛	¼	⅜	⅝	⅜	¼
Convexity Required for Vertical Curve	⅜	½	⅜	¾	⅞	1⅛	⅞	¾	⅜	½	⅜	¾	⅞	1⅛	⅞	¾
Sum of Deflections and Convexity	¾	1	½	1¼	1½	2¼	1½	1¼	⅝	⅞	½	1⅛	1⅜	2	1⅜	1⅛
Required Camber		1"				2¼"				⅞"				2"		



POINT OF DEFLECTION DIAGRAM

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SUPERSTRUCTURE DETAILS
BRIDGE NO. MOT-40-0594
I.R.-70 UNDER BROOKVILLE-SALEM RD.
MONTGOMERY COUNTY I.R.-70
STA. 313+86.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	V.B. & B.B.		B.H.	K.O.	6-26-62	

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

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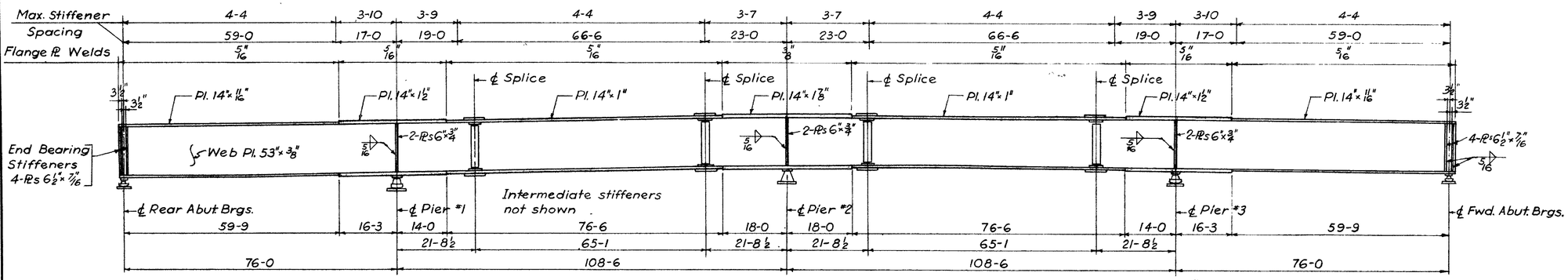
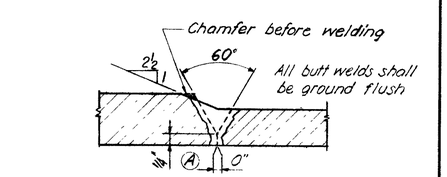
MONTGOMERY COUNTY
MOT-40-2.73

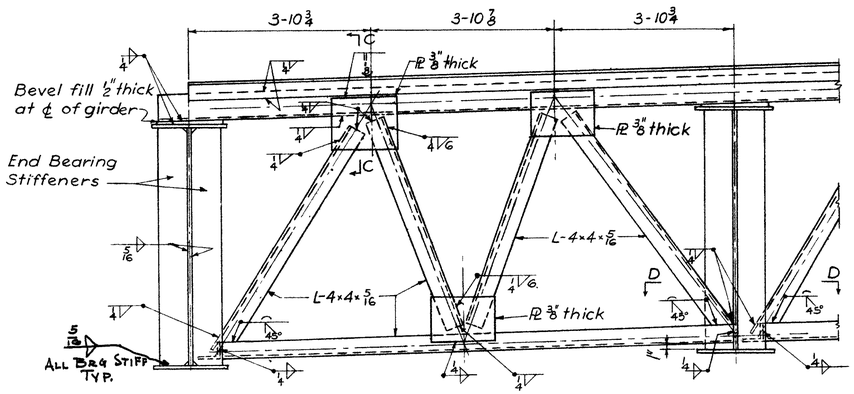


ELEVATION

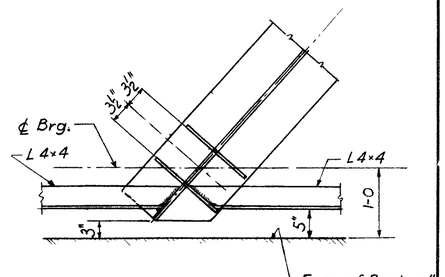


Note Ⓐ: Weld after placing at least one pass on other side.

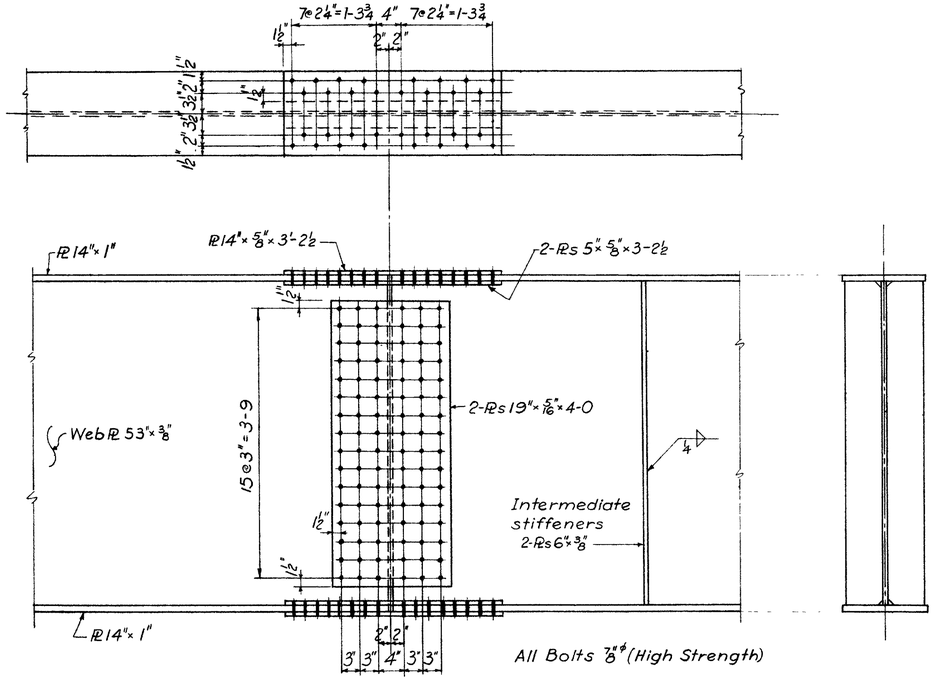
DETAIL OF FLANGE PLATE SPLICE



SECTION B-B



SECTION D-D



DETAILS OF FIELD SPLICE AND INTERMEDIATE STIFFENERS

NOTES:

HIGH STRENGTH STEEL BOLTS: see Supplemental Specification No. S-207.10, dated 4-25-61

All butt welds shall receive radiographic examination, according to Supplemental Specification No. S-307, dated 8-23-60.

SHOP SPLICES: If additional shop splices are necessary, their location and detail shall be submitted to the Director for approval prior to ordering of material.

ERECTION PROCEDURE: Contractor shall provide to the Director for approval 3 prints showing his proposed erection procedure for the plate girders.

SOLE PLATES of rockers at Pier No. 3 and the forward abutment shall be beveled to follow the roadway gradient. Plates shall be 3½" thick at the ℄ of pier rockers and 2½" thick at the ℄ of abutment rockers.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

SUPERSTRUCTURE DETAILS

BRIDGE NO. MOT-40-0594
I.R.-70 UNDER BROOKVILLE-SALEM RD.

MONTGOMERY COUNTY — I.R.-70 STA. 313 + 86.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N. & A.M.	B.B.		B.H.	K.G.	6-26-62	

SH. No. 8

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

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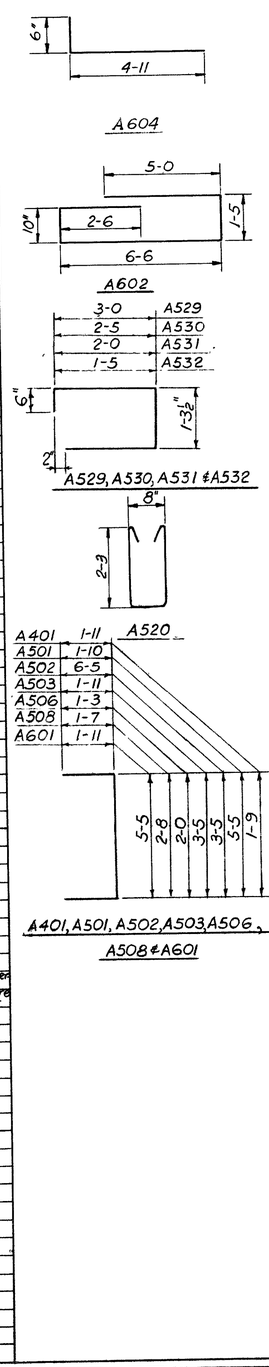
MONTGOMERY COUNTY
MOT-40-2.73

REINFORCING STEEL LIST

TWO ABUTMENTS

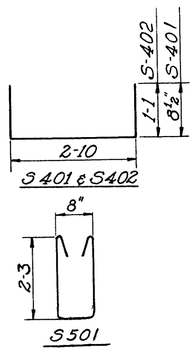
Mark	No. Req'd	Length	Type	Description	Weight
A801	28	29-10	S	Footing	2230
A601	80	8-11	B	Footing	1072
A602	94	17-1	B	Backwall	2411
A603	12	7-0	S	"	126
A604	32	5-3	B	Footing	252
A501	80	8-10	B	Footing	737
A502	68	16-0	B	"	1135
A503	72	7-0	B	Abutment	526
A504	40	28-3	S	"	1179
A505	24	25-10	S	"	635
A506	60	4-3	B	"	266
A507	8	13-5	S	Footing	112
A508	48	5-7	B	"	279
A509	8	6-6	S	"	54
A510	16	10-0	S	"	167
A511	16	9-6	S	"	159
A512	16	5-7	S	Wingwalls	94
A513	8	5-0	S	"	42
A514	20	10-9	S	"	224
A515	18	4-6	S	"	84
A516	68	4-0	S	"	284
A517	4	2-6	S	"	10
A518	50	10-3	S	"	535
A519	2	13-8	S	"	28
A520	76	5-9	B	"	456
A521	10	21-8	S	"	226
A522	16	13-10	S	"	231
A523	6	11-4	S	"	71
A524	6	17-10	S	"	112
A525	6	9-0	S	"	56
A526	10	24-0	S	"	250
A527	12	16-7	S	"	208
A528	12	11-6	S	Curb	144
A529	26	7-3	B	"	197
A530	8	6-1	B	"	51
A531	8	5-3	B	"	44
A532	8	4-1	B	"	34
A401	16	5-4	B	Footing	57
R519				Parapet	see superstructure bar list
R521				"	



REINFORCING STEEL LIST

SUPERSTRUCTURE

Mark	No. Req'd	Length	Type	Desc.	Weight
S601	397	36-2	S	Slab	21,568
S602	610	38-10	S	"	35,577
S603	78	40-0	S	"	4,686
S604	2 series of 41	6-6 to 34-5	S	"	2,520
S605	12	6-6	S	"	117
S501	496	5-10	B	Curb	3,016
S401	496	4-0	B	Curb	1,325
S402	496	4-9	B	"	1,574
R501	168	17-1	S	Parapet	*
R502	16	12-2	S	"	*
R519	8	13-8	S	"	*
R521	8	21-8	S	"	*
S701	397	36-2	S	Slab	29,350
S702	2 series of 41	6-6 to 34-5	S	"	3,429
S703	12	6-6	S	"	159

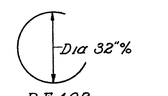


* to be included with railing for payment

REINFORCING STEEL LIST

REPLACEMENT BARS

Mark	No. Req'd	Length	Type	Weight
RE401	1	5-3	S	
RE402	1	5-3	B	
RE501	1	5-7	S	
RE601	4	5-11	S	
RE701	2	6-2	S	
RE801	1	6-6	S	
RE901	1	6-10	S	
RE1001	1	7-2	S	
RE1101	1	7-6	S	

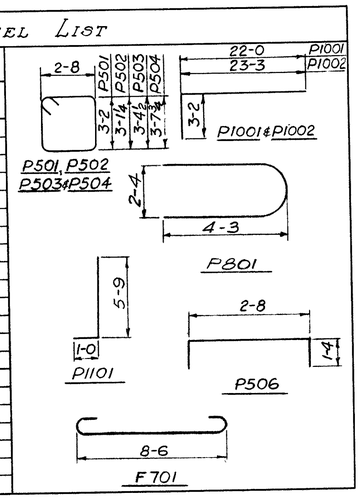


* Replacement for spiral reinforcing bar shall not have deformations but shall in other respects conform to Item 5-4

REINFORCING STEEL LIST

PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Length	Type	Weight
P501	35	35	—	12-2	B	888
P502	—	—	8	12-0	B	100
P503	—	—	10	12-7	B	131
P504	—	—	17	13-1	B	232
P505	4	4	4	24-0	S	300
P506	7	7	—	5-1	B	74
P601	2	2	—	11-4	S	68
P801	4	4	4	9-10	B	315
P1001	4	4	4	24-11	B	1,287
P1002	4	4	4	26-2	B	1,351
P1003	3	3	3	24-2	S	936
P1004	8	8	8	18-4	S	1,893
P1005	4	4	4	16-2	S	835
P1101	40	40	40	6-6	B	4,144
P1102	40	—	40	17-4	S	7,366
P1103	—	40	—	17-8	S	3,755
P1104	6	6	6	16-8	S	1,594
F901	80	80	80	11-0	B	8976



SPIRAL REINFORCING STEEL LIST FOR PIERS

Mark	No. Required Pier No. 1	Pier No. 2	Pier No. 3	Core Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	4		4	32"	14-3	4½"	41	2119
SP402		4		32"	14-6	4½"	42	1084

NOTE:
Bar size is indicated in the bar mark. The first digit where three digits are used and the first two digits where four digits are used, indicate the bar size number. For example, P501 is a No. 5 size bar and P1001 is a No. 10 size bar.

SPIRAL REINFORCING BARS

The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown in the steel list for the spiral bars is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

REINFORCING STEEL DETAILS
BRIDGE NO. MOT-40-0594
I.R-70 UNDER BROOKVILLE-SALEM RD.

MONTGOMERY COUNTY — I.R-70 STA. 313 + 86.32

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N	B.B & H.S.		B.H.	K.H.	6-26-62	

Sh. No. 9

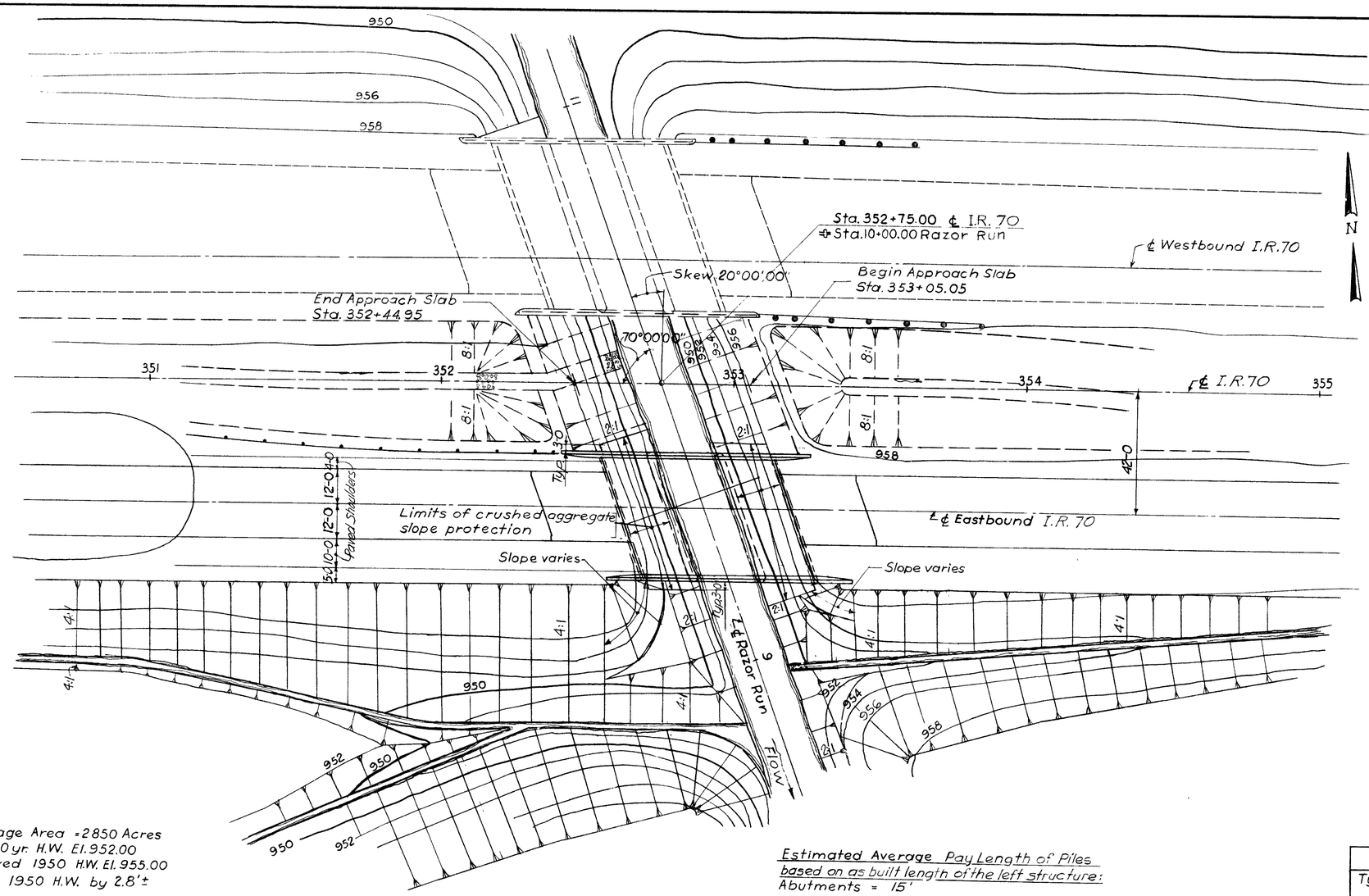
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

224

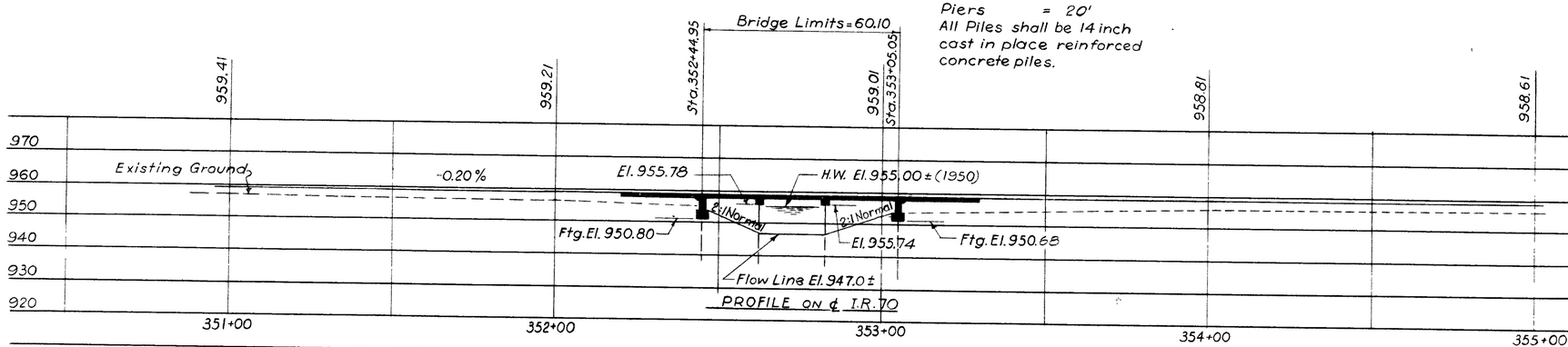
MONTGOMERY COUNTY
MOT-40-2.73

PRESENT STRUCTURE CARRYING W.B. LANES

STRUCTURE No. MOT-40-0664
TYPE: Continuous Concrete Slab with capped Pile Abutments & capped Pile Piers.
SPANS: 18-0; 22-6 & 18-0
ROADWAY: 58-6 f/f of Parapets with Aluminum Railing & 1-0 Curbs
LOAD FREQUENCY: C.F.=2000 (Adequate for AASHO alternate Loading.
WEARING SURFACE: 1"-Monolithic Concrete
SKEW: 20°00'00" Rt. Forward.
ALIGNMENT: Tangent
APPROACH SLABS: A.S.-1-54 (25'-0 Long)



Estimated Average Pay Length of Piles based on as built length of the left structure:
Abutments = 15'
Piers = 20'
All Piles shall be 14 inch cast in place reinforced concrete piles.



PROPOSED STRUCTURE

Type: Continuous concrete slab with capped pile abutments and capped pile piers
Spans: 18-0; 22-6 & 18-0
Roadway: 42-0 f/f of parapets with aluminum railing and 1'-2" curbs.
Load Frequency: C.F. = 2000(57)(Adequate for AASHO alternate loading)
Wearing Surface: 1"-Monolithic concrete
Skew: 20°00'00" Rt. Forward
Alignment: Tangent.
Approach Slabs: A.S.-1-54 (25'-0 Long)

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

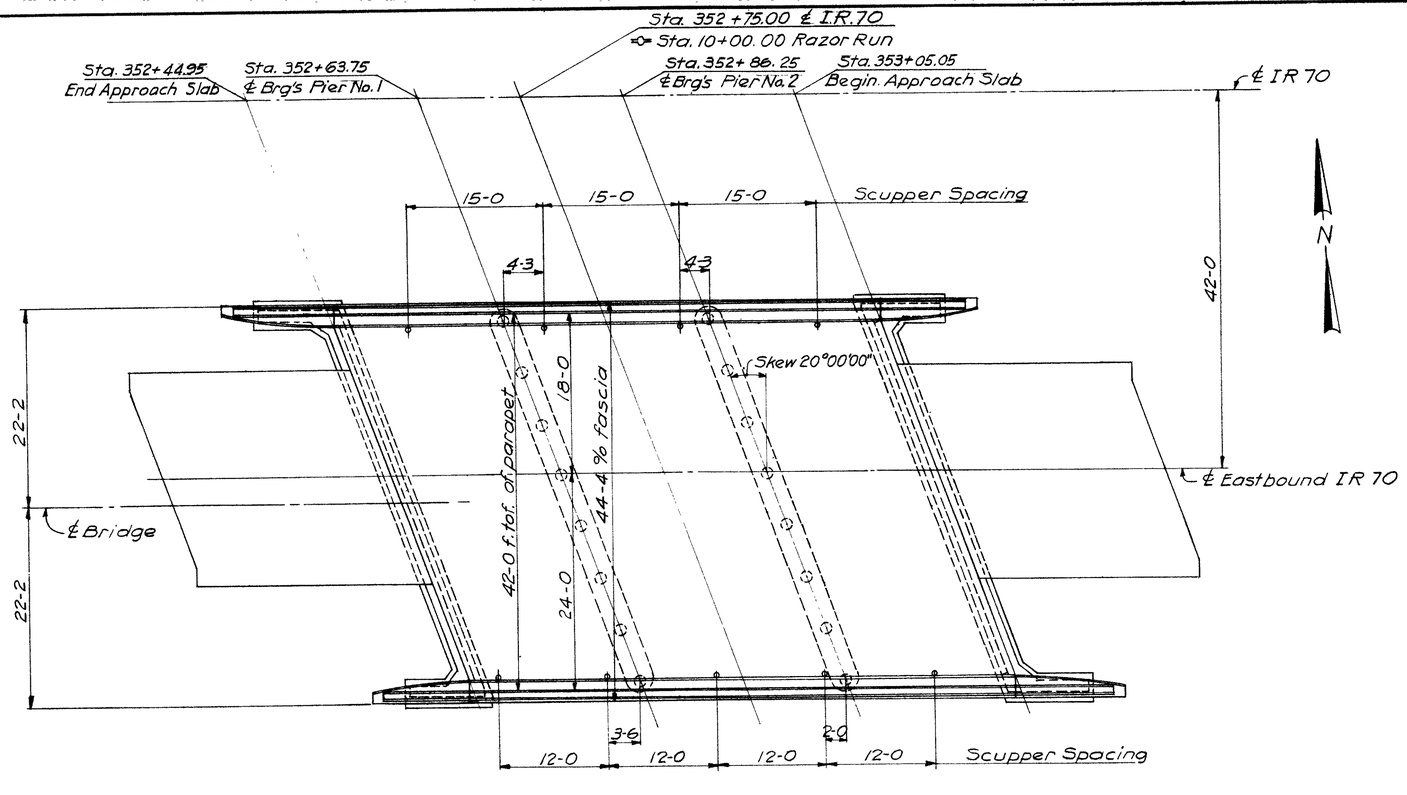
SITE PLAN
BRIDGE NO. MOT-40-0664R
E.B. I.R.-70 OVER RAZOR RUN

MONTGOMERY COUNTY — I.R.-70
SCALE: 1" = 20'-0" — STA. 352+75.00

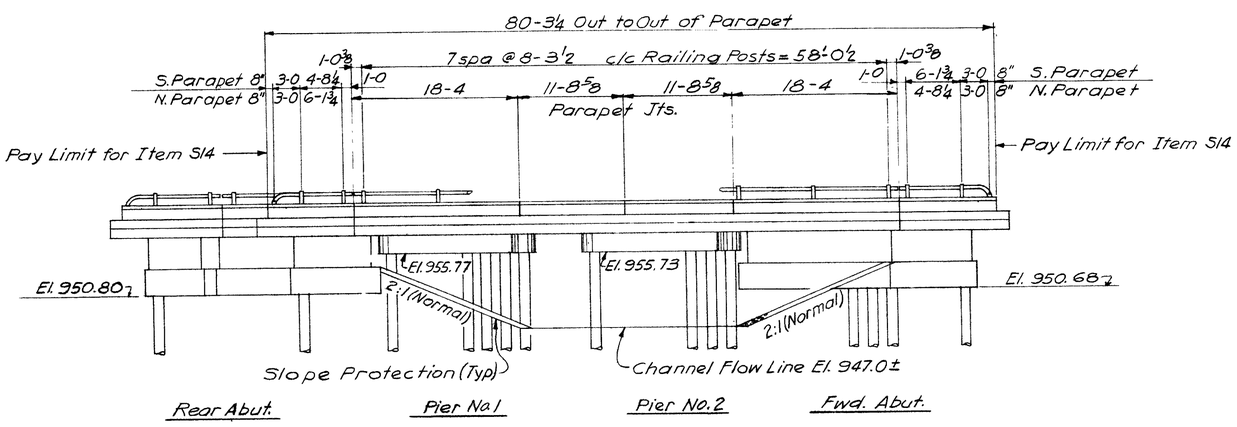
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
H.N.	B.B.	H.N.			

FED. RD. DIVISION	STATE	PROJECT		225
2	OHIO			

MONTGOMERY COUNTY
MOT-40-2.73



PLAN



ELEVATION

REFERENCE shall be made to standard drawings:
AR-1-57 revised 4-2-62
CS-2-54 revised 2-2-59
P-1-54 revised 2-2-59

DESIGN SPECIFICATIONS: This Structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

PILES shall be driven to minimum bearing capacity of 22 tons per pile for the abutments and 24 tons per pile for the piers.

PIER PILE ENCASEMENT as shown on Std. No. P-1-54 may be ommited provided that the tapered portion, if any, of all pier piles does not extend above the stream bed of the proposed surface of the ground. If the tapered portion of any pile extends above these limitations the encasement will be required for all the pier piles. If the encasement is ommited the pile casings shall have a thickness of metal not less than No.7 gage, and the painting of the piles shall extend to low water elevation or, if the proposed surface of the ground is above low water, the painting shall extend to at least one foot below the surface of the ground.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Supers.	Piers	Abut	Gen.		
E-2	113	Cu.Yds.	Unclassified Excavation			113			
S-1	131	Cu.Yds.	Class "C" Concrete, superstructure & pier caps	113	18				
S-1	84	Cu.Yds.	Class "E" Concrete, abutments			84			
	(45,563			33,600		7,193			
S-4	~~44,197~~	Lbs	Reinforcing Steel	~~32,547~~	4,770	~~7,175~~			
S-14	160.54	Lin. Ft.	Railing (Aluminum rail & supports & conc. parapet)	120.21		40.33			
S-16	Lump	Sum	First test pile				Lump		
S-18	590	Lin. Ft.	14" Cast-in-place Reinforced concrete piles		320	270			
S-29	23	Cu. Yds.	Porous Backfill			23			
S-29	9	Each	Scuppers, 4" dia Cast Iron or Wrought Iron pipe				9		
Special	131	Each	Water-reducing, Set-retarding Admixture *	113	18				
7.10	192	Sq. Yds.	Crushed aggregate slope protection				192		

* See proposal note

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

GENERAL PLAN
BRIDGE NO. MOT-40-0664R
E.B. I.R.-70 OVER RAZOR RUN

MONTGOMERY COUNTY — I.R.-70 STA. 352+75.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S.		V.B.	K.A.	6-12-62	5-23-63

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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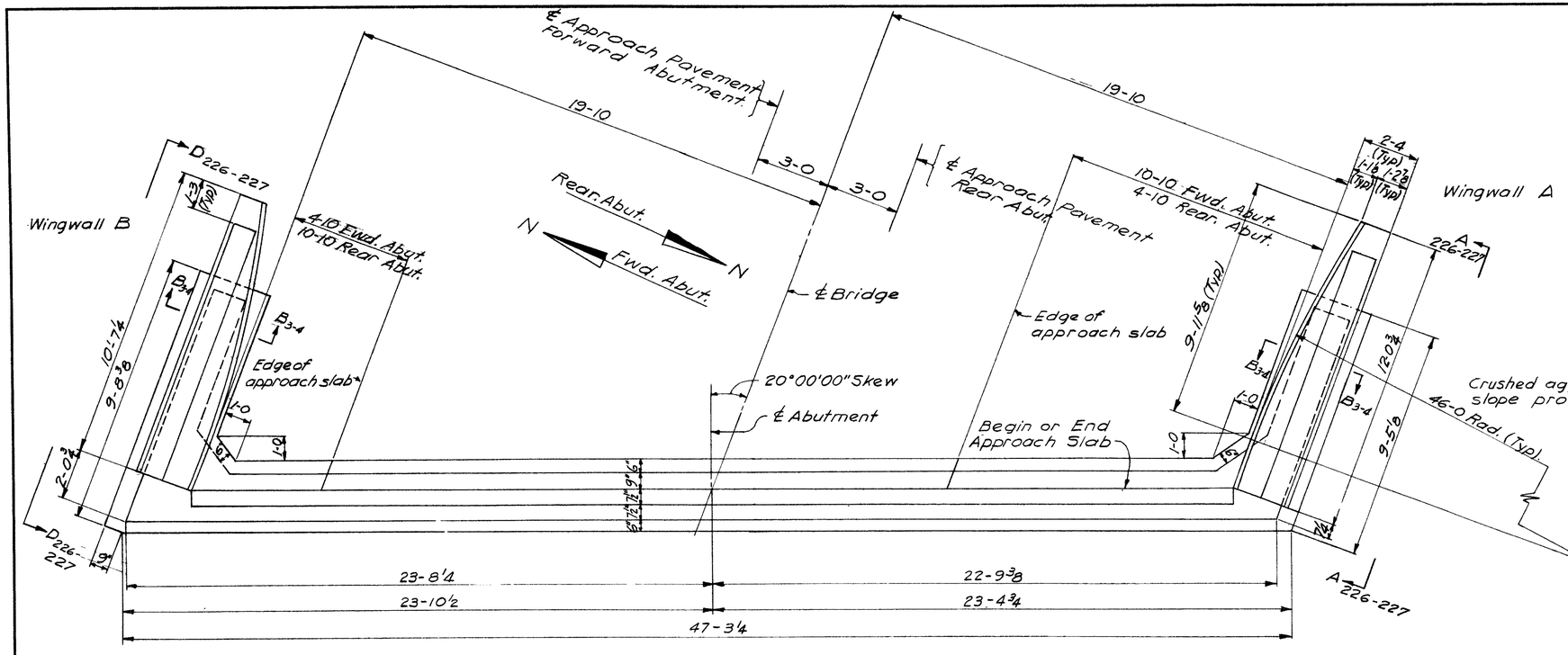
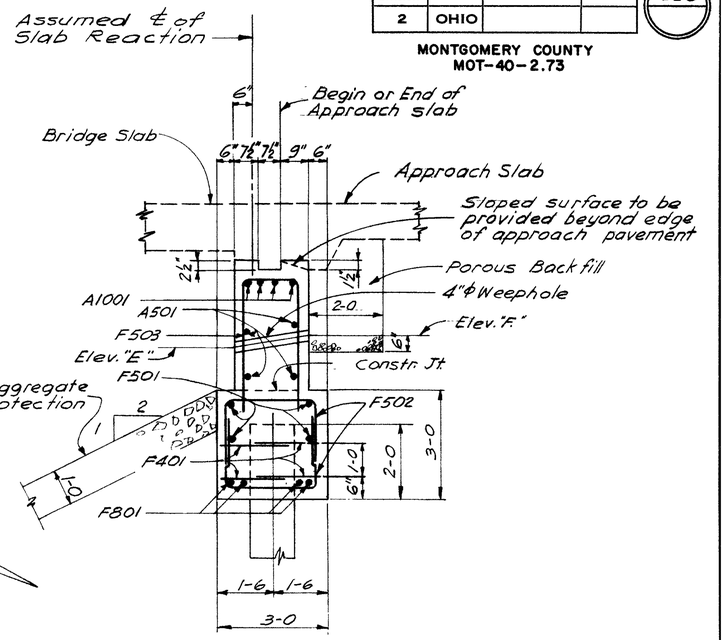
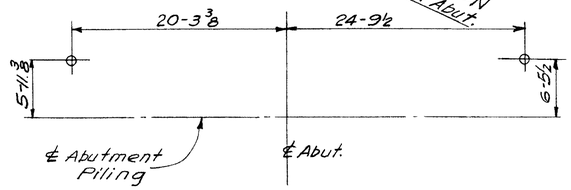
MONTGOMERY COUNTY
MOT-40-2.73



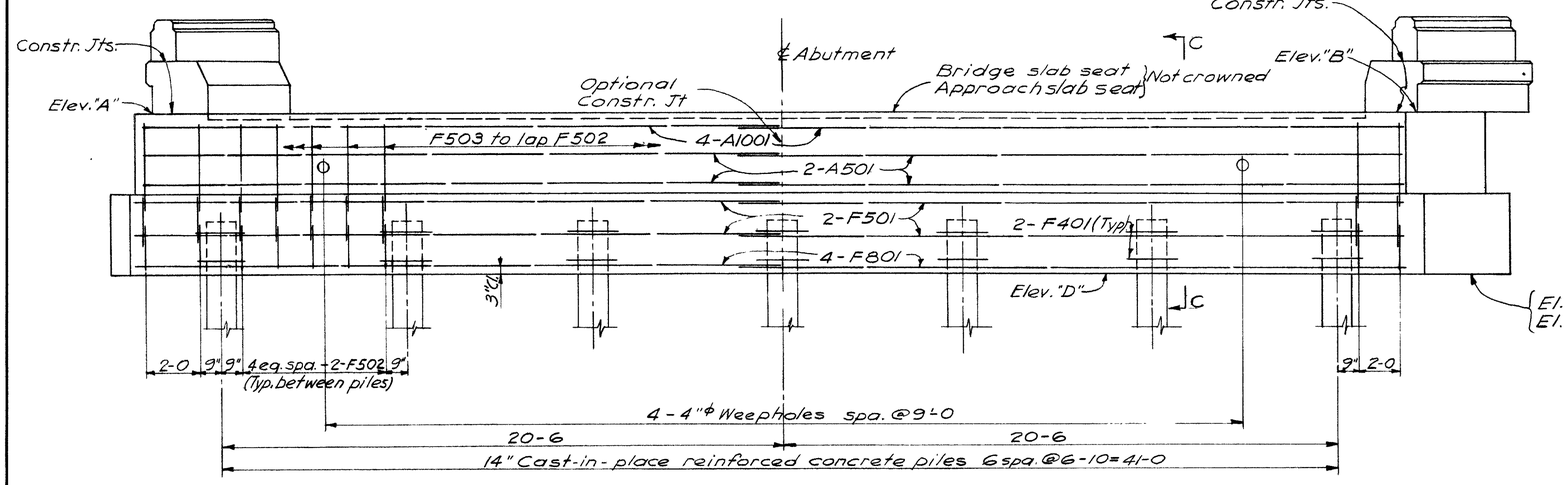
PLAN



SECTION C-C



WINGWALL PILE LOCATION



ELEVATION

NOTE:
For additional reinforcing steel and sectional views see sheet No. 227.
For Table of elevations see sheet No. 227.
Maximum calculated abutment pile reaction = 22 tons

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

ABUTMENT DETAILS
BRIDGE NO. MOT-40-0664R
E.B. I.R.-70 OVER RAZOR RUN

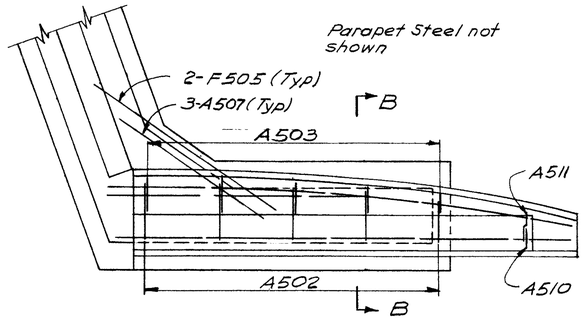
MONTGOMERY COUNTY — I.R.-70 STA. 352+75.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N.	H.S		V.B.	K.A.	6-12-68	

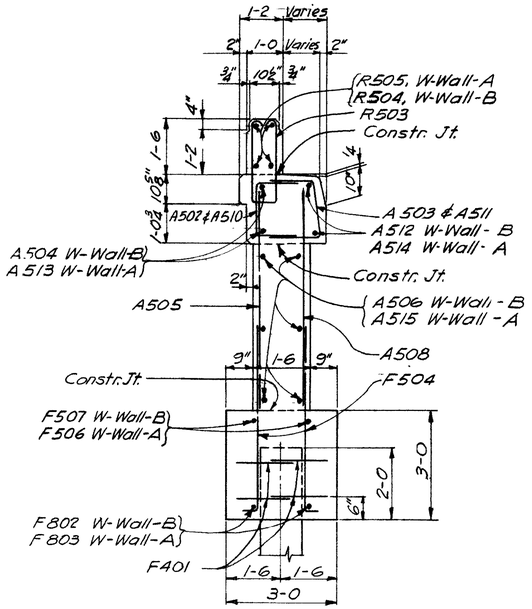
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

227

MONTGOMERY COUNTY
MOT-40-2.73

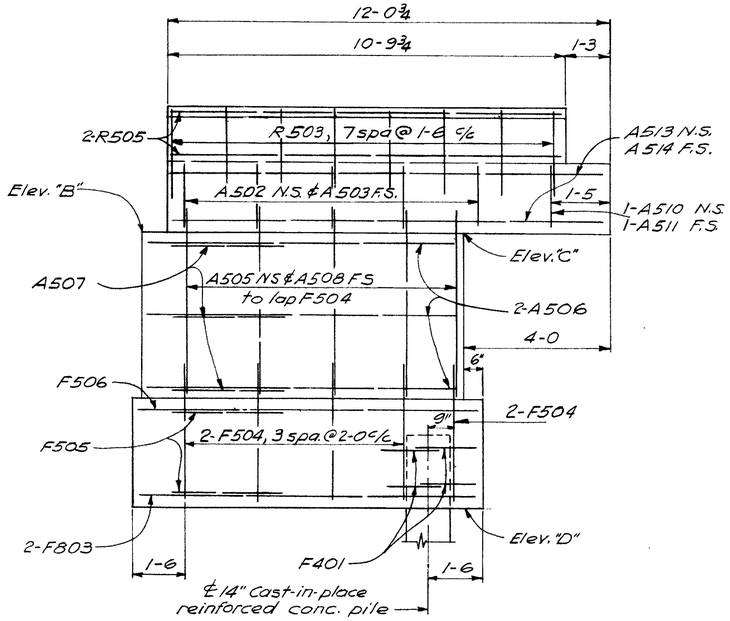


PLAN OF VIEW A-A

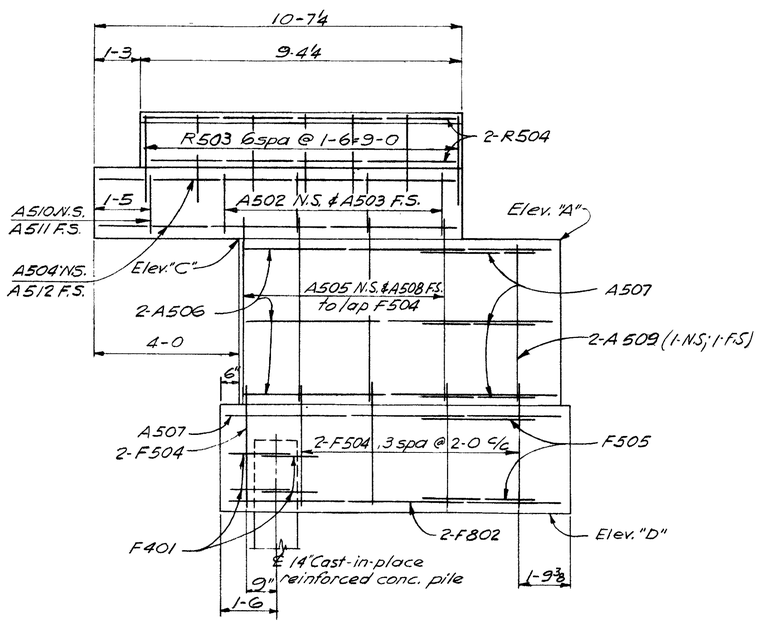


SECTION B-B

ELEVATIONS							
LOCATION	A	B	C		D	E	F
			Wingwall A	Wingwall B			
Fwd. Abut.	957.81	957.69	957.67	957.80	950.80	955.00	955.25
Rear Abut.	957.80	957.93	957.95	957.82	950.68	955.00	955.25



VIEW A-A
Wingwall A



VIEW D-D
Wingwall B

NOTES:

REINFORCING STEEL : N.S. denotes near side, F.S. denotes far side.

POROUS BACKFILL: Porous backfill as shown between wingwalls shall extend upward to the approach slab and to the surface of the earth shoulders. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

PARAPETS : Concrete parapets are included under Item S-14 for payment.

H. W. LOCHNER AND CO.
ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

WINGWALLS
BRIDGE NO. MOT-40-0664R
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MONTGOMERY COUNTY — I.R.-70 STA. 352+75.00

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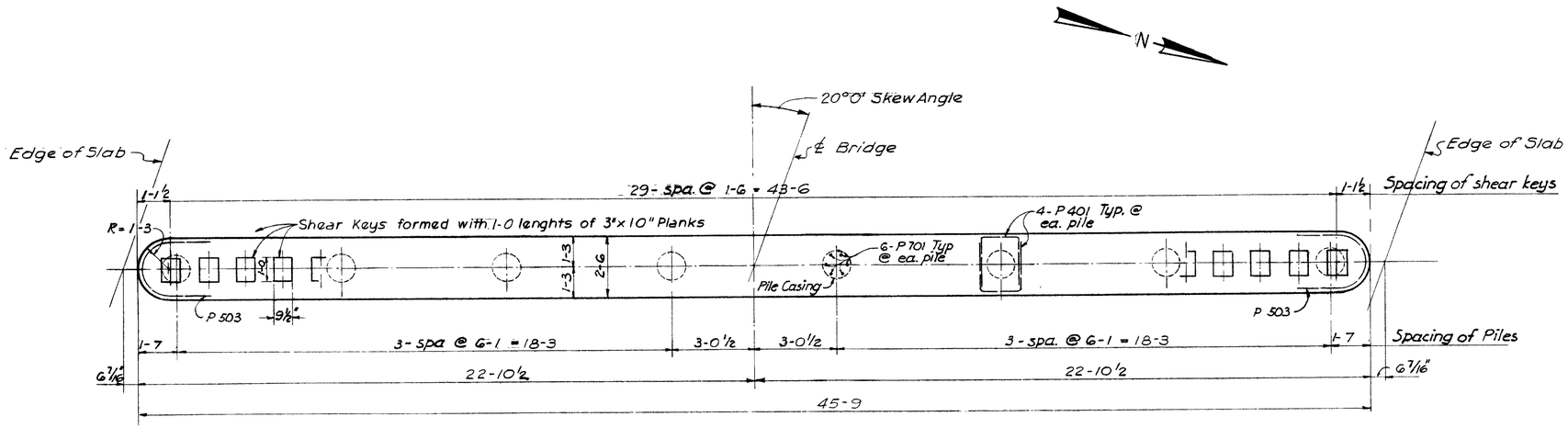
H.N.	H.S.		V.B.	K.A.	6-12-62	

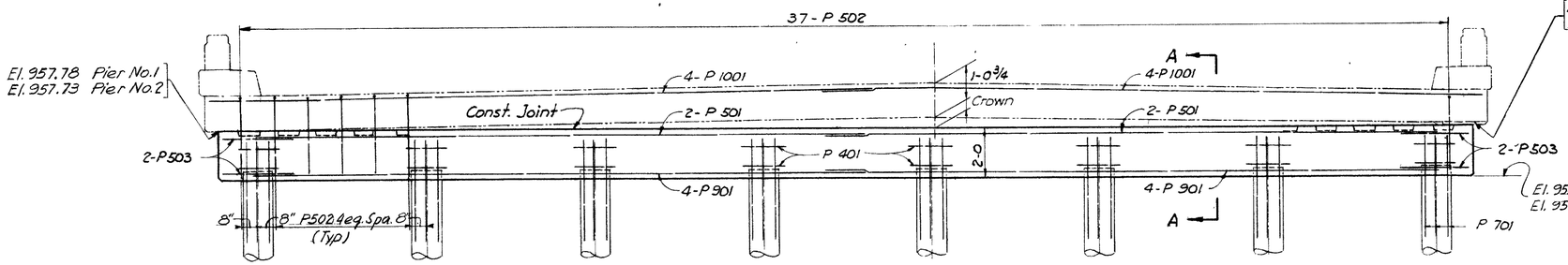
FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

228

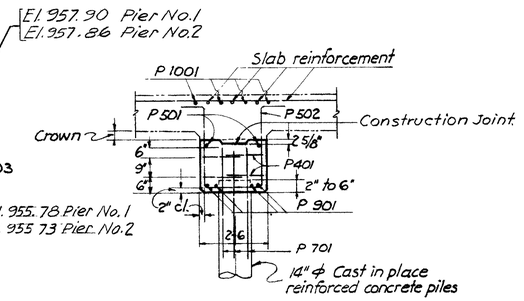
MONTGOMERY COUNTY
MOT-40-2.73



PLAN



ELEVATION



SECTION A-A

NOTES:

For notes and pile encasement details see Std. Drwg. P-1-54 revised 12-1-54.

Maximum calculated pier pile reaction = 24 tons

H. W. LOCHNER AND CO.
CONSULTING ENGINEERS
20 N. WACKER DRIVE
CHICAGO, ILLINOIS

PIER DETAILS
BRIDGE NO. MOT-40-0664R
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MONTGOMERY COUNTY I.R.-70
STA. 352+75.00

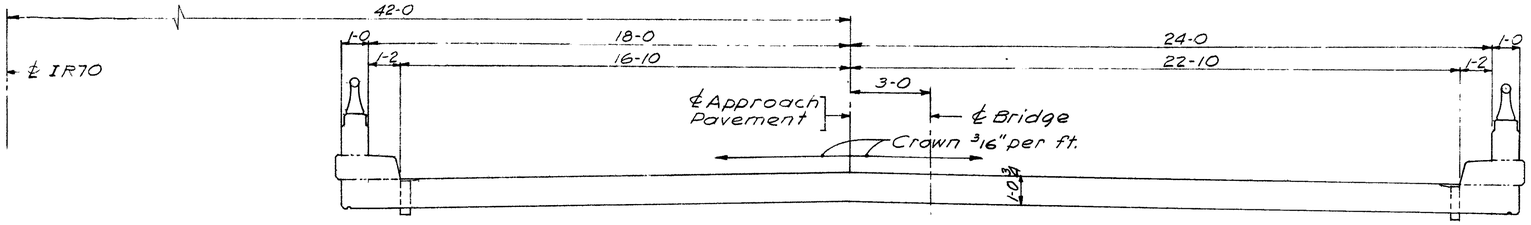
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.N	H.S.		V.B.	K.A.	6-12-62	

Sheet No. 5

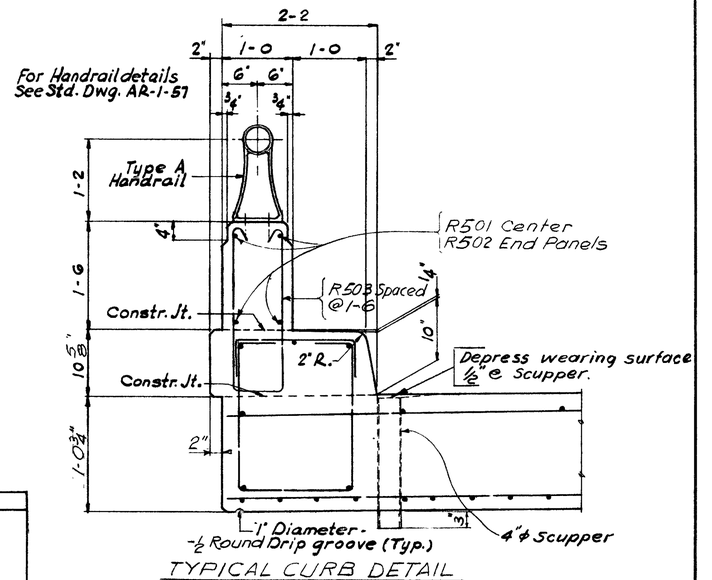
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

229

MONTGOMERY COUNTY
MOT-40-2.73



TRANSVERSE SECTION



TYPICAL CURB DETAIL

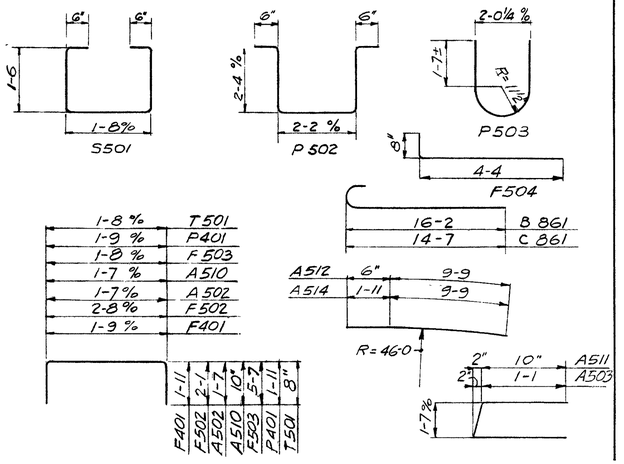
REINFORCING STEEL LIST

MARK	No. REQ'D	LENGTH	TYPE	WEIGHT	
ABUTMENTS					
F401	72	5-5	B	261	
F501	16	24-7	S	410	
F502	136	6-7	B	933	
F503	68	12-7	B	892	
F504	40	4-10	B	202	
F505	8	5-0	S	42	
F506	4	9-2	S	38	
F507	4	8-6	S	35	
F801	16	25-1	S	1072	
F802	4	8-6	S	91	
F803	4	9-2	S	98	
A501	16	23-11	S	399	
A502	18	4 @ 3-6	B	~~25~~ 84	
A503	18	3-8	B	69	
A504	4	10-3	S	43	
A505	18	5-2	S	97	
A506	24	8-4	S	209	
A507	12	5-9	S	72	
A508	18	5-6	S	103	
A509	4	3-11	S	16	
A510	4	3-0	B	13	
A511	4	3-2	B	13	
A512	4	10-3	B	43	
A513	4	11-8	S	49	
A514	4	11-8	B	49	
A1001	16	24-5	S	1681	
R503	30	5-10	B	183	
R504	8	9-0	*		
R505	8	10-5	*		
PIERS					
P401	64	5-5	B	232	
P501	8	22-5	S	187	
P502	74	7-4	B	566	
P503	8	6-4	B	53	
P701	96	4-0	S	785	
P901	16	22-9	S	1238	
P1001	16	24-10	S	1710	

MARK	No. REQ'D	LENGTH	TYPE	WEIGHT	
SUPERSTRUCTURE					
A861	120	21-7	S	6915	
B861	38	17-3	B	1750	
C861	40	15-8	B	1673	
D861	38	16-10	S	1708	
E861	40	13-2	S	1406	
F861	88	~~17-1~~ 19-6" 10-11" 9-11	S	~~4014~~ 4582	
G861	42	~~8-6~~	S	~~943~~ 1224	
H861	44	~~7-6~~	S	~~881~~ 1165	
J601	~~44~~	11-2	S	738	
K601	22	~~10-10~~ 8-5"	S	~~358~~ 278	
M701	104	24-5	S	5190	
N701	88	24-5	S	4392	
O501	6	13-3	S	83	
P501	12	14-0	S	175	
R761	20	12-5	S	508	
S501	160	5-2	B	862	
T501	160	2-9	B	459	
		~~2-9~~		~~357~~	
R501	16	11-4	*		
R502	16	18-0	*		
R503	80	5-9	B	480	
REPLACEMENT BARS					
RE 1001	1	7-2			
RE 901	1	6-10			
RE 801	2	6-6			
RE 701	1	6-2			
RE 601	1	5-11			
RE 501	1	5-7			
RE 401	1	5-3			

* Included with Item 514 for payment

BENDING DIAGRAMS



NOTES

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A801 is a No. 8 size bar and A1001 is a No. 10 size.

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